

Result No.	Score	Query	Match	Length	DB ID	Description
1	1024.5	97.9	217	1	STHU	somatotropin 1 pre
2	981.5	93.7	217	2	167410	somatotropin - rhe
3	939.5	89.7	217	1	STHUV	somatotropin 2 pre
4	873.5	83.4	217	2	E32435	chorionammotropin
5	872.5	83.3	217	1	LCHUC	chorionammotropin
6	866.5	82.8	217	2	167409	chorionic somatotropin
7	850.5	81.2	217	1	153267	chorionic somatotropin
8	843.5	80.6	217	2	167411	chorionammotropin
9	842.5	80.5	215	2	A22449	chorionic somatotropin
10	831.5	79.4	212	2	167408	chorionammotropin
11	779.5	74.5	199	2	B32435	chorionammotropin
12	698	66.7	216	1	I46145	somatotropin precur
13	694	66.3	216	1	STBO	somatotropin precur
14	687	65.6	216	2	JCA632	somatotropin precur
15	682	65.1	216	2	B49483	somatotropin - go1
16	682	65.1	216	2	B49159	somatotropin precur
17	679	64.9	216	1	STMS	somatotropin precur
18	677	64.7	217	1	STBO	somatotropin precur
19	672	64.2	216	2	A37782	somatotropin precur
20	666	63.6	217	1	STSH	somatotropin precur
21	666	63.6	217	1	STGT	somatotropin precur
22	666	63.6	217	2	S37682	somatotropin - dom
23	661	63.1	216	1	STRT	somatotropin precur
24	614	58.6	256	1	STHUV2	somatotropin 2 pre
25	603	57.6	216	2	JK219	somatotropin - Afr
26	602	57.5	190	2	PN0140	somatotropin - sei
27	601	57.4	190	1	A61584	somatotropin - alp
28	598	57.1	190	2	JS0429	somatotropin - Arc
29	596	56.9	190	1	STBO	somatotropin - hor

## ALIGNMENTS

## RESULT 1

STHU

A;Note:

the 20K short

form

somatotropin

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residues

58-72

(32-46

in

the

active

hormone

R;Chen, B.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seesburg, P.

somatotropin 1 precursor [validated] - human

N;Alternate names: growth hormone 1; hGH; N; Pituitary somatotropin

N;Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short

C;Species: Homo Sapiens (man)

C;Accession: A3731; A32435; A93694; A9247; A90051; A93397; A91764; A90217; A923

R;DeNoto, F.M.; Moore, D.D.; Goodman, H.M.

Nucleic Acids Res. 9, 3719-3720, 1981

A;Title: Human growth hormone DNA sequence and mRNA structure: possible alternative splice

A;Reference number: A93731; MUID:6204939; PMID:6269091

A;Accession: A3731

A;Molecule type: DNA

A;Residues: 1-217 &lt;DN&gt;

A;Cross-references: GB:V00520

A;Note:

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A;Accession: A3731

A;Molecule type: DNA

A;Residues: 1-217 &lt;DN&gt;

A;Cross-references: GB:J03071; NID:9183148; PID:9183149

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A;Accession: A3731

A;Molecule type: DNA

A;Residues: 1-217 &lt;DN&gt;

A;Cross-references: GB:V00520

A;Note:

A;Residues: 27-94;96-217 <LIC>  
 R;Niall, H.D.  
 Nature New Biol. 230, 90-91, 1971  
 A;Title: Revised primary structure for human growth hormone.  
 A;Reference number: A93397; MUID:71139765; PMID:5279046  
 A;Accession: A93397  
 A;Molecule type: protein  
 A;Residues: 27-51 <NIA>  
 R;Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.  
 Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971  
 A;Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution  
 A;Reference number: A93778; MUID:71153968; PMID:5279528  
 A;Accession: A93778  
 A;Molecule type: protein  
 A;Residues: 119-120-157-159 <NI2>  
 R;Niall, H.D.  
 in Prolactin and Carcinogenesis. Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K.,  
 A;Title: The chemistry of the human lactogenic hormones.  
 A;Reference number: A94427  
 R;Bewley, T.A.; Dixon, J.S.; Li, C.H.  
 Int. J. Pept. Protein Res. 4, 281-287, 1972  
 A;Title: Sequence comparison of human pituitary growth hormone, human chorionic somatotropin  
 A;Reference number: A917544; MUID:73092028; PMID:4675454  
 A;Accession: A91764  
 A;Molecule type: protein  
 A;Residues: 27-217 <BEW>  
 R;Lewis, U.J.; Bonewald, L.F.; Lewis, I.J.  
 Biochem. Biophys. Res. Commun. 92, 511-516, 1980  
 A;Title: The 20,000 dalton variant of human growth hormone: location of the amino acid d  
 A;Reference number: A90217; MUID:80130196; PMID:7356479  
 A;Contents: somatotropin, 20K short variant  
 A;Accession: A90217  
 A;Molecule type: protein  
 A;Residues: 46-57;73-80 <LEW>  
 R;Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.; Turner, C.; Ca  
 J. Biol. Chem. 256, 2395-2401, 1981  
 A;Title: The 20,000 molecular weight variant of human growth hormone. Preparation and sc  
 A;Contents: somatotropin, 20K short variant  
 A;Accession: A92311  
 A;Molecule type: protein  
 A;Residues: 27-57;73-79 <CHA>  
 R;Singh, R.N.P.; Seavy, B.K.; Lewis, L.J.; Lewis, U.J.  
 J. Protein Chem. 2, 425-436, 1983  
 A;Title: Human growth hormone peptide 1-43: isolation from pituitary glands.  
 A;Reference number: A61466  
 A;Accession: A61466  
 A;Molecule type: protein  
 A;Residues: 27-69 <SIN>  
 A;Note: growth hormone 5K peptide has insulin potentiating activity; its physiological p  
 R;Robson, V.M.J.; Rae, I.D.; Gray, F.  
 Biol. Chem. Hoppe-Seyler 371, 423-431, 1990  
 A;Title: Identification of the aspartamide structure in a previously-reported peptide.  
 A;Reference number: S09685; MUID:30334745; PMID:2378679  
 A;Accession: S09685  
 A;Molecule type: protein  
 A;Residues: 27-34, 'L', 36-47 <ROB>  
 R;de Vos, A.M.; Uiltzoch, M.; Kosakiakoff, A.A.  
 Science 255, 306-310, 1992  
 A;Title: Human growth hormone and extracellular domain of its receptor: crystal structur  
 A;Reference number: A41728; MUID:92196577; PMID:1549776  
 A;Contents: annotation; X-ray crystallography, 2.8 angstroms  
 A;Note: the structure of the complex with growth hormone receptor is described  
 R;Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.  
 A;Reference number: 141126; MUID:86137333; PMID:312261  
 A;Molecule type: preliminary; translated from GB/EMBL/DDBJ  
 A;Residues: 1-26 <RES>  
 A;Cross-references: GB:M14398; NID:9183158; PIDN:AA52554.1; PMID:9183159

C;Comment: The gene for this hormone is transcribed only in somatotrophic cells of the  
 R;Niall, H.D.  
 C;Comment: About 90% of somatotropin is the 22K long form.  
 C;Genetics:  
 A;Gene: GDB:GH1  
 A;Cross-references: GDB:119982; OMIM:139250  
 A;Map position: 17q23.1-17q23.3  
 A;Introns: 4/1; 5/3; 97/3; 152/3  
 A;Superfamily: prolactin  
 C;Keywords: alternative splicing; hormone: pituitary  
 F;1-56/Domain: signal sequence #status predicted <SIG>  
 F;27-21/Product: somatotropin 1, long form #status experimental <SOL>  
 F;27-69/Product: growth hormone 5K peptide #status experimental <SKP>  
 F;27-57;73-21/7/Product: somatotropin 1, short form #status experimental <SOS>  
 F;79-191;208-215/Disulfide bonds: #status experimental

Query Match 97.9%; Score 1024.5; DB 1; Length 217;  
 Best Local Similarity 92.6%; Pred. No. 1-2e-86;  
 Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1;

Qy 1 MATGSPRTSLLIAFGGLCLPWLQEGSAAFPPTPLSLRDNASLRAHLHQALAFDTYQEF--- 57  
 Db 1 MATGSPRTSLLIAFGGLCLPWLQEGSAAFPPTPLSLRDNAMIRAHHLHQALAFDTYQEFEEA 60  
 Qy 58 -----NPOTSLCFSESEIPTPSNREBTOQSNLLEIILRISPLLIOSWLEPVQFLR 105  
 Db 61 YIPEQKYSFLQNQPQTSLCFSESEIPTPSNREBTOQSNLLEIILRISPLLIOSWLEPVQFLR 120  
 Qy 106 SVEFANSLVYGAQDSNVYDILKDLIEQIOTMGRLEDGSPPTGQIIPKQTYSKFDTNSHNDD 165  
 Db 121 SVEFANSLVYGAQDSNVYDILKDLIEQIOTMGRLEDGSPPTGQIIPKQTYSKFDTNSHNDD 180  
 Qy 166 ALLKNGGLICFRKMDKVEFLRIVQCRSYEGSGCF 202  
 Db 181 ALLKNGGLICFRKMDKVEFLRIVQCRSYEGSGCF 217

RESULT 2  
 167410 somatotropin - rhesus macaque  
 N;Alternate names: growth hormone  
 C;Species: Macaca mulatta (rhesus macaque)  
 C;Date: 31-May-1996 #sequence\_revision 31-May-1996 #text\_change 16-Jul-1999  
 C;Accession: I67410; A05094  
 R;Golos, T.G.; Durnig, M.; Fisher, J.M.; Fowler, P.D.  
 Endocrinology 133, 1744-1752, 1993  
 A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complements  
 A;Reference number: I53267; MUID:9408724; PMID:8404617  
 A;Accession: I67410  
 A;Status: translated from GB/EMBL/DBJ  
 A;Molecule type: mRNA  
 A;Residues: 1-217 <RES>  
 A;Cross-references: GB:116556; NID:9293114; PIDN:AAA1884.1; PMID:9293115  
 R;Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.  
 R;Raben, M.S.  
 Arch. Biochem. Biophys. 245, 287-291, 1986  
 A;Title: The primary structure of monkey pituitary growth hormone.  
 A;Reference number: MUID:86129460; PMID:3080959  
 A;Accession: A05094  
 A;Molecule type: protein  
 A;Residues: 27-99 'Q, 101-1178 'D', 180-217 <LIC>  
 A;Note: the monkey species is not identified in the reference

Query Match 93.7%; Score 981.5; DB 2; Length 217;  
 Best Local Similarity 88.9%; Pred. No. 1e-82;  
 Matches 193; Conservative 3; Mismatches 6; Indels 15; Gaps 1;

Qy 1 MATGSPRTSLLIAFGGLCLPWLQEGSAAFPPTPLSLRDNASLRAHLHQALAFDTYQEF--- 57

Db	1	MAAGSRSLLLAFAALLCPLWQEGSAFTPIPLSRFLDNAMLRAHRLHQALAFDTYQEEEA	60	F:27-57,73-217/Product: somatotropin 2, short splice form #status predicted
Qy	58	-----NPOTSLCSEB1PTPNEQQENLELLRLISLILQSLWLPVQFLR	105	F:79-191,208-215/Disulfide bonds: #status predicted
Db	61	YIPKEQKYSFELQNPOTSLCSEB1PTPNEQQENLELLRLISLILQSLWLPVQFLR	120	F:166/Binding site: carbohydrate (Asn) (covalent) #status predicted
Qy	106	SYFANSILYGAQDSNVYDILKQDLEGQIOTLGRLEGSPRTGQIFKOTYSKFDTNSHND	165	Query Match 89.7%; Score 939.5; DB 1; Length 217;
Db	121	SYFANSILYGAQDSNVYDILKQDLEGQIOTLGRLEGSPRTGQIFKOTYSKFDTNSHND	180	Best Local Similarity 86.2%; Pred. No. 7.5e-79; Matches 187; Conservative 4; Mismatches 11; Indels 15; Gaps 1;
Qy	166	ALLKNYGLYCFRKDMQKETFLRIVQCRSVEGSCGF	202	Qy 1 MATGSRSLLLAFAGLLCLPWLQEGSAFTPIPLSRFLDNASLRAHRLHQALAFDTYQEEF --- 57
Db	181	ALLKNYGLYCFRKDMQKETFLRIVQCRSVEGSCGF	217	Db 1 MAAGSRSLLLAFAGLLCLPWLQEGSAFTPIPLSRFLDNAMLRLLQDLYQEEFEA 60
RESULT 3				
STHUV somatotropin 2 precursor - human				
N;Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin; Contains: somatotropin 2, long splice form; somatotropin 2, short splice form				
C;Species: Homo sapiens (man)				
C;Date: 17-Dec-1982 #sequence revision 10-Feb-1995 #text_change 21-Jul-2000				
C;Accession: D32435; B28072; A01511; I52104; A60711				
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seburg, P.				
Genomics 4, 479-497, 1989				
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.				
A;Reference number: A32435; MUID:89307277; PMID:2744760				
A;Accession: D32435				
A;Molecule type: DNA				
A;Residues: 1-217 <CHE>				
A;Cross-references: GB:J03071; PIDN:AA52552.1; PMID:9183152				
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.				
J. Biol. Chem. 263, 9001-9006, 1988				
A;Title: Two distinct species of human growth hormone variant mRNA in the human placenta				
A;Reference number: A92725; MUID:88243769; PMID:3379057				
A;Accession: B28072				
A;Molecule type: mRNA				
A;Residues: 1-217 <COO>				
R;Seburg, P.H.				
DNA 1, 239-249, 1982				
A;Title: The human growth hormone gene family: nucleotide sequences show recent divergence				
A;Reference number: A01511; MUID:83182010; PMID:716909				
A;Accession: A01511				
A;Molecule type: DNA				
A;Residues: 1-34, 'P', 36-217 <SEE>				
R;Igout, A.; Scippo, M.L.; Franken, F.; Hennen, G.				
Arch. Int. Physiol. Biochem. 96, 63-67, 1988				
A;Title: Cloning and nucleotide sequence of placental hGH-V cDNA.				
A;Reference number: I52104; MUID:8924984; PMID:2460050				
A;Status: Preliminary; translated from GB/EMBL/DDBJ				
A;Molecule type: mRNA				
A;Residues: 1-217 <ICO>				
A;Cross-references: GB:MM8451; PIDN:AAA35891.1; PMID:9183180				
R;Frankenne, F.; Scippo, M.L.; Van Beuman, J.; Igout, A.; Hennen, G.				
J. Clin. Endocrinol. Metab. 111, 15-18, 1990				
A;Title: Identification of placental growth hormone as the growth hormone-V gene				
A;Reference number: A60711; MUID:90317018; PMID:2196278				
A;Molecule type: protein				
A;Residues: 27-44; 46-57 <PRA>				
A;Experimental source: tissue placenta				
A;Note: partial glycosylation was demonstrated by lectin binding				
C;Comment: This gene is expressed by the placenta.				
A;Gene: GDB:GH2				
A;Cross-references: GDB:119983; OMIM:139240				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Keywords: alternative splicing; glycoprotein; hormone; placenta				
F:1-26/Domain: signal sequence #status predicted <SIG>				
F:27-217/Product: somatotropin 2, long splice form #status predicted <SOL>				
RESULT 4				
E32435 choriomammotropin B precursor - human				
N;Alternate names: chorionic somatomammotropin 2				
C;Species: Homo sapiens (man)				
C;Date: 29-Dec-1989 #sequence_revision 29-Dec-1989				
C;Accession: E32435				
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seburg, P.				
Genomics 4, 479-497, 1989				
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.				
A;Reference number: A32435; MUID:89307277; PMID:2744760				
A;Accession: E32435				
A;Molecule type: DNA				
A;Residues: 1-217 <CHE>				
A;Cross-references: GB:J03071; PIDN:AA52553.1; PMID:9183153				
A;Cross-references: GB:J03071; PIDN:9183148; PMID:AA52553.1; PID:9183153				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				
C;Superfamily: prolactin				
C;Genetics:				
A;Gene: GDB:CSH2				
A;Cross-references: GDB:119813; OMIM:118820				
A;Map position: 17q22-17q24				

C;Date: 23-Oct-1981 #sequence revision 23-Oct-1981 #text change 08-Dec-2000  
 C;Accession: C32435; A94422; T52342; A93833; A93192; A90054; A94427; A61283; I55229; I559  
 R; Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelman, R.E.; Seeburg, P.  
 Genomics 4, 479-497, 1989  
 A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.  
 A;Reference number: A32435; MUID:89307277; PMID:2744760  
 A;Accession: C32435  
 A;Molecule type: DNA  
 A;Residues: 1-217 <CHE>  
 A;Cross-references: GB:703071; PID:9183148; PMID:9183551.1; PID:9183151  
 R; Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallewell, R.A.; Page, G.S.; Smith, S.; Tisch  
 Biochem. Int. 16, 287-292, 1988  
 A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription wa  
 A;Reference number: A32434; MUID:89209096; PMID:2835050  
 A;Accession: T52342  
 A;Status: translated from GB/EMBL/DBJ  
 A;Molecule type: mRNA  
 A;Residues: 1-3 <TA>  
 A;Cross-references: GB:M35419; NID:9506822  
 R; Sherwood, L.M.; Burstein, Y.; Schechter, I.  
 Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979  
 A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human pl  
 A;Reference number: A93833; MUID:80034970; PMID:291043  
 A;Accession: A93833  
 A;Molecule type: protein  
 A;Experimental source: Placenta  
 R; Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.  
 Nature 270, 494-499, 1977  
 A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammotropin  
 A;Reference number: A93192; MUID:73201971; PMID:593368  
 A;Accession: A93192  
 A;Molecule type: DNA  
 A;Residues: 50-217 <SHI>  
 R; Li, C.H.; Dixon, J.S.; Chung, D.  
 Arch. Biochem. Biophys. 155, 95-110, 1973  
 A;Title: Amino acid sequence of human chorionic somatomammotropin.  
 A;Reference number: A90054; MUID:73201971; PMID:4712450  
 A;Accession: A90054  
 A;Molecule type: protein  
 A;Residues: 27-217 <LIC>  
 A;Experimental source: placenta  
 R; Niall, H.D.  
 A;Title: The chemistry of the human lactogenic hormones.  
 A;Reference number: A94427  
 A;Molecule type: protein  
 A;Residues: 27-217 <NIA>  
 A;Experimental source: placenta  
 R; Nic A Bhaird, N.; Tipton, K.F.  
 Biochem. Soc. Trans. 19, 20S, 1991  
 A;Title: Catechol-O-methyltransferase from human placenta: purification and some propert  
 A;Accession: A61283  
 A;Molecule type: protein  
 A;Residues: 27-46 <NCI>  
 A;Note: chorionammotropin apparently copurified with placental catechol-O-methyltransfer  
 R; Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.  
 Nature New Biol. 233, 59-61, 1971  
 A;Title: Amino-acid sequence of human placental lactogen.  
 A;Reference number: A93401; MUID:720163.3; PMID:5286363  
 A;Contents: annotation  
 R; Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.  
 Nature New Biol. 235, 64, 1972  
 A;Reference number: A93405

A;Contents: annotation  
 R; Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.  
 J. Biol. Chem. 254, 3782-3787, 1979  
 A;Title: Identification of the interchain disulfide bonds of dimeric human placental la  
 A;Reference number: A92251; MUID:79173081; PMID:438159  
 A;Contents: annotation; dimeric disulfide bonds  
 R; Selby, M.J.; Barca, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.  
 J. Biol. Chem. 259, 13131-13138, 1984  
 A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two f  
 A;Reference number: I55229; MUID:85030426; PMID:6208192  
 A;Status: translated from GB/EMBL/DBJ  
 A;Molecule type: DNA  
 A;Residues: 1-217 <RES>  
 A;Cross-references: GB:K02401; NID:9181120; PID:AAA52115.1; PID:9181121  
 R; Seeburg, P.H.; Shine, J.; Martial, J.A.; Ulrich, A.; Goodman, H.  
 Trans. Assoc. Am. Physicians 90, 109-116, 1977  
 A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.  
 A;Reference number: I59658; MUID:78160787; PMID:611657  
 A;Accession: I59658  
 A;Status: translated from GB/EMBL/DBJ  
 A;Molecule type: mRNA  
 A;Residues: 160-217 <RE2>  
 A;Cross-references: GB:M25118; NID:9181124; PID:AAA35721.1; PID:9181125  
 C;Genetics:  
 A;Gene: GDB:CSH1  
 A;Cross-references: GDB:119084; OMIM:150200  
 A;Map position: 17q22-17q24  
 A;Introns: 4/1; 5/3; 9/3; 152/3  
 C;Superfamily: prolactin  
 C;Keywords: placenta  
 F;1-26/Domain: signal sequence #status experimental <SIG>  
 F;27-217/Product: chorionammotropin A #status experimental <MAT>  
 F;79-191/Disulfide bonds: #status experimental  
 F;208-215/Disulfide bonds: (in monomeric form) #status experimental  
 F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental  
 F;215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental  
 Query Match 83.3%; Score 872.5%; DB 1; Length 217;  
 Best Local Similarity 79.3%; Pred. No. 1.1e-72;  
 Matches 172; Conservative 11; Mismatches 19; Indels 15; Gaps 1;  
 QY 1 MATGSRSTLLIAFGHICLPLQEGSAAFTPLSLRFDNASLRHHLQAFDTYQRF---  
 Db 1 MAPGSRSTLLIAFGHICLPLQEGAVQTYPLSLRFDHMLQARHQLAIDTYQEEFT 60  
 QY 58 ----NPOTSLCFSSEISIPTPSNREETQOKSNLFLRLRISLILQSWLEPYQFLR 105  
 Db 61 YIPKDQKYSFLHDSQTSFCFSDSIPTPSNMEETQOKSNLFLRLRISLILBSWLEPVFLR 120  
 QY 106 SVFANSLVGASDSDNNYDILKQLEECIQTLGMRLEDGSPTGQIKOTYSKPDNTSHNHD 165  
 Db 121 SMFANNLVYDTSDDYHLLKDLFEGIQTLMGRLEDGSRTGQILKQTYSKFDNTSHNHD 180  
 Db 181 ALLKNYGLLGCPRKMDKVTFLRNYQCRSYEGSGCP 202  
 RESULT 6  
 chorionic somatomammotropin-3 - rhesus macaque  
 C;Species: Macaca mulatta (rhesus macaque)  
 C;Accession: 167409  
 C;Date: 31-May-1996 #sequence revision 31-May-1996 #text\_change 16-Jul-1999  
 R;Golos, T.G.; Durning, M.J.M.; Fisher, J.M.; Fowler, P.D.  
 Endocrinology 133, 1744-1752, 1993  
 A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementa  
 A;Reference number: I53267; MUID:9408724; PMID:8404617  
 A;Accession: 167409  
 A;Status: preliminary; translated from GB/EMBL/DBJ  
 A;Molecule type: mRNA  
 A;Residues: 1-217 <RES>

A;Cross-references: GB:Li6554; NID:9293112; PID:AAA18841.1; PID:9293113  
C;Superfamily: prolactin

Query Match 82.8%; Score 866.5; DB 2; Length 217;  
Best Local Similarity 77.4%; Pred. No. 3.8e-72;  
Matches 168; Conservative 14; Mismatches 20; Indels 15; Gaps 1;

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQF-- 57  
Db 1 MAAGSRTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQF-- 57  
Qy 58 -----NPQPSLCFSESIPTPSNREETQKSNLLELLRISILLIOSWLEPYQFLR 105  
Db 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Db 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 106 SVFANSLYVGASDSNVYDLKDLLEGQTLMRGLEDSPRTGQIFKQTYSKFDTNSHNDD 165  
Db 121 SVFANNLVYGTSESDAYDLKNNLQDQSPRTGQIFKQTYSKFDTNSHNDD 180  
Qy 166 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 202  
Db 181 SLLKNYELLHCFRKDMKDVETFLRIVOCRSEVGSCGF 217

RESULT 7  
153267 chorionic somatomammotropin-1 - rhesus macaque  
C;Species: Macaca mulatta (rhesus macaque)  
C;Date: 31-May-1996 #sequence\_revision 31-May-1996 #text\_change 16-Jul-1999  
C;Accession: I53267  
R;Golos, T.G.; Durniag, M.; Fisher, J.M.; Fowler, P.D.  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementai  
A;Reference number: I53267, MUID:94008724; PMID:804617  
A;Status: preliminary; translated from GB/EMBL/DBJ  
A;Molecule type: mRNA  
A;Residues: 1-217 <RES>  
A;Cross-references: GB:Li6552; NID:9293108; PID:AAA18839.1; PID:9293109  
C;Superfamily: prolactin

Query Match 81.2%; Score 850.5; DB 2; Length 217;  
Best Local Similarity 75.6%; Pred. No. 1.1e-70;  
Matches 164; Conservative 18; Mismatches 20; Indels 15; Gaps 1;

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQF-- 57  
Db 1 MAAGSRTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQFEEA 60  
Qy 58 -----NPQPSLCFSESIPTPSNREETQKSNLLELLRISILLIOSWLEPYQFLR 105  
Db 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 106 SVFANSLYVGASDSNVYDLKDLLEGQTLMRGLEDSPRTGQIFKQTYSKFDTNSHNDD 165  
Db 121 SVFANNLVYGTSESDAYDLKNNLQDQSPRTGQIFKQTYSKFDTNSHNDD 180

Qy 166 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 202  
Db 181 SLLKNYELLHCFRKDMKDVETFLRIVOCRSEVGSCGF 217

RESULT 8  
167411 somatomotropin - rhesus macaque  
N;Alternate names: growth hormone  
C;Species: Macaca mulatta (rhesus macaque)  
C;Accession: 167411  
R;Golos, T.G.; Durniag, M.; Fisher, J.M.; Fowler, P.D.  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementai  
A;Reference number: I53267; MUID:94008724; PMID:804617

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQF-- 57  
Db 1 MAAGSRTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQFEEA 60  
Qy 58 -----NPQPSLCFSESIPTPSNREETQKSNLLELLRISILLIOSWLEPYQFLR 105  
Db 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 106 SVFANSLYVGASDSNVYDLKDLLEGQTLMRGLEDSPRTGQIFKQTYSKFDTNSHNDD 165  
Db 119 SMFANNLVYGTSESDAYDLKNNLQDQSPRTGQIFKQTYSKFDTNSHNDD 178

Qy 166 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 202  
Db 179 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 215

RESULT 10  
167408 chorionic somatomammotropin-2 - rhesus macaque (fragment)  
C;Species: Macaca mulatta (rhesus macaque)  
C;Accession: 167408  
R;Golos, T.G.; Durniag, M.; Fisher, J.M.; Fowler, P.D.  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementai  
A;Reference number: I53267; MUID:94008724; PMID:804617

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQF-- 57  
Db 1 MAAGSRTLIAFGLLCLPWLQEGSAFPTIPLSRLDNASLRAHRLHQLAFTDYEQFEEA 60  
Qy 58 -----NPQPSLCFSESIPTPSNREETQKSNLLELLRISILLIOSWLEPYQFLR 105  
Db 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 61 YIPKEKHSLSMGRNPQASFCLPWLQAGRVSPVSPSLRFDNMIMQAHRLHQLAFTDYEQFKEK 60  
Qy 106 SVFANSLYVGASDSNVYDLKDLLEGQTLMRGLEDSPRTGQIFKQTYSKFDTNSHNDD 165  
Db 119 SMFANNLVYGTSESDAYDLKNNLQDQSPRTGQIFKQTYSKFDTNSHNDD 178

Qy 166 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 202  
Db 179 ALLKNYGLYCFRKDMKDVETFLRIVOCRSEVGSCGF 215

Endocrinology 133, 1744-1752, 1993  
 A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementar  
 A;Number: 153267; MUID:8404617  
 A;Accession: I67408  
 A;Status: preliminary  
 A;Molecule type: mRNA  
 A;Reference number: 1-212 <RES>  
 A;Cross-references: GB:Li16553; NID:9293110; PID:AAA18840.1; PMID:8206387  
 C;Superfamily: prolactin

Query Match 79.4%; Score 831.5; DB 2; Length 212;  
 Best Local Similarity 75.5%; Pred. No. 6.1e-69;  
 Matches 160; Conservatve 18; Mismatches 19; Indels 15; Gaps 1;

6 RTSSLIAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEF---- 57  
 Db 1 RTSSLIAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEF---- 60

QY 58 -----NPNTSLCSESPTPSNREETTQOKSNLELLRSLLQSLWLPQFQFLRSVPAF 110  
 Db 61 KCHS1MENQASFCEADSPTPSNLEETQOKSNLELLRSLLQSLWLPQFQFLRSVPAF 120

QY 111 SLVYGASDSNVYDILKLDLREGIQTLMGRLEDGSPTGQIFKOTYSKEDTINSHNDALLRKN 170  
 Db 121 NLLHHTSDSVDHDLKLDLREGIETLMWRLDEDGIPRTGHIFKOTYSKFDHSQNDDSLXN 180

QY 171 YGLLHCPRKDMKDVKETELRIVQCRPSVGEVSGCF 202  
 Db 181 YGLLHCPRKDMDVETFLRMVQCRIVGEVSGCF 212

RESULT 11  
 B32435  
 chorionommotropin-like protein precursor - human  
 C;Species: Homo sapiens (man)  
 C;Accession: B32435  
 - C;Reference number: A32435; MUID:89307277; PMID:2744760  
 A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.  
 A;Accession: B32435  
 A;Status: preliminary  
 A;Molecule type: DNA  
 A;Cross-references: GB:J03071; NID:9183148; PID:AAA52550.1; PMID:9183150  
 C;Superfamily: prolactin

Query Match 74.5%; Score 779.5; DB 2; Length 199;  
 Best Local Similarity 77.8%; Pred. No. 3.3e-64;  
 Matches 157; Conservatve 10; Mismatches 32; Indels 3; Gaps 1;

QY 1 MATGSRSTLLIAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEFNPQ 60  
 Db 1 MAAGSRSRSTLLIAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEFISS 60

QY 61 TSLCFSSISIPTPSNREETTQOKSNLELLRSLLQSLWLPQFQFLRSVPAF 120  
 Db 61 WGM---DSDIPSSNMNETTQOKSNLELLRSLLQSLWLPQFQFLRSVPAF 120

QY 121 YDILKLDLREGIQTLMGRLEDGSPTGQIFKOTYSKFDTINSHNDALLRKNGLYCFRKD 180  
 Db 118 DYHLLKLDLREGIQTLMGRLEDGSPTGQIFKOTYSKFDTINSHNDALLRKNGLYCFRKD 177

QY 181 MDKVETFLRIVQCRPSVGEVSGCF 202  
 Db 178 MDKVETFLRIVQCRPSVGEVSGCF 199

RESULT 12  
 I46145  
 somatotropin precursor - dog  
 N;Alternate names: growth hormone

C;Species: Canis lupus familiaris (dog)  
 C;Date: 19-Dec-1997 #sequence\_revision 19-Dec-1997 #text\_change 16-Jul-1999  
 C;Accession: I46145; NID:9288361; PID:CAA37411.1; PMID:9288362  
 R;Accacio-Martinez, J.A.; Barrera-Saldana, H.A.  
 Gene 143, 277-280, 1994  
 A;Title: A dog growth hormone cDNA codes for a mature protein identical to pig growth hormone  
 A;Reference number: 146145; MUID:94266166; PMID:8206387  
 A;Accession: I46145  
 A;Status: preliminary; translated from GB/EMBL/DDJB  
 A;Molecule type: mRNA  
 A;Residues: 1-216 <ASC>  
 A;Cross-references: EMBL:Z23067; NID:9312195; PID:CAA80601.1; PMID:9312196  
 A;Note: submitted to the EMBL Data Library, June 1993  
 C;Superfamily: prolactin  
 C;Keywords: hormone; pituitary  
 F;1/26/Domain: signal sequence #status predicted <SIG>  
 F;2/216/Domain: somatotropin #status predicted <MAT>  
 F;78-189,206-214/Disulfide bonds: #status predicted

Query Match 66.7%; Score 698; DB 2; Length 216;  
 Best Local Similarity 64.5%; Pred. No. 1.1e-56;  
 Matches 140; Conservative 20; Mismatches 41; Indels 16; Gaps 3;

QY 1 MATGSRSTLLIAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEF--- 57  
 Db 1 MAAGSRTSVLLAFLCLLQWQGSAFAEPPTPLPSLFDNNSLRAPHLQALAFDTYQEFERA 60

QY 58 -----NPQTSLCLPESIPTPSNREETTQOKSNLELLRSLLQSLWLPQFQFLRS 106  
 Db 61 YIPEGQRYSTQNAQAFCSSETIAPTGKDEAQOQSDELLFSLLISWLPQFQFLRS 120

QY 107 VFANSLVGASDSNVYDILKLDLREGIQTLMGRLEDGSPTGQIFKOTYSKFDTINSHNDAA 166  
 Db 121 VFTNLSLFGTSD-RYTEKLKDLEEGIQALMRELEEDGSPRAQIILQTYDKEFTNLRSSDDA 179

QY 167 LLKNGGLYCEPRKDMKDVKETFLRIVQCRPSVGEVSGCF 202  
 Db 180 LLKNGGLSCLPCKDILKAETYLRYMKCRREVESSCAF 216

RESULT 13  
 STPG  
 somatotropin precursor - pig  
 N;Alternate names: growth hormone  
 C;Species: Sus scrofa domestica (domestic pig)  
 C;Date: 30-Jun-1992 #sequence\_revision 30-Jun-1992 #text\_change 18-Jun-1999  
 C;Accession: J00015; S00015; T46585; PC1063; A01516; A94594  
 R;Vize, P.D.; Wells, J.R.E.  
 Gene 55, 339-344, 1987  
 A;Title: Isolation and characterization of the porcine growth hormone gene.  
 A;Reference number: J00015; MUID:89030700; PMID:89030700  
 A;Accession: S09015  
 A;Molecule type: DNA  
 A;Residues: 1-216 <VIZ>  
 A;Cross-references: GB:M17704; NID:9164475; PID:AAA31044.1; PMID:9164476  
 R;Kato, Y.; Shimokawa, N.; Kato, T.; Hirai, T.; Yoshihama, K.; Kawai, H.; Hattori, M.A.  
 Biochim. Biophys. Acta 1048, 290-293, 1990  
 A;Title: Porcine growth hormone: molecular cloning of cDNA and expression in bacterial  
 A;Reference number: S09015; MUID:90212663; PMID:2182128  
 A;Accession: S09015  
 A;Molecule type: mRNA  
 A;Residues: 1-216 <KAT>  
 A;Cross-references: GB:X53325; NID:9288361; PID:CAA37411.1; PMID:9288362  
 R;Seeburg, P.H.; Sias, S.; Adelman, J.P.; de Boer, H.A.; Hayflick, J.; Jhurani, P.; Goeddel, D.W.; 37-45, 1983  
 A;Title: Efficient bacterial expression of bovine and porcine growth hormones.  
 A;Reference number: I46838; MUID:83209123; PMID:8303731  
 A;Accession: I46584  
 A;Status: preliminary; translated from GB/EMBL/DDJB  
 A;Molecule type: mRNA  
 A;Residues: 7-8, 'V', 10-21, 'Q', 23-216 <SEB>  
 A;Cross-references: GB:M27326; NID:9164477; PMID:AAA31045.1; PID:9164478  
 R;Su, T.

Gene 69, 81-89, 1988  
 A;Title: A multisite-directed mutagenesis using T7 DNA polymerase: application for recombinant protein engineering. *PMID:89137997*; *PMID:3224824*  
 A;Reference number: I46585  
 A;Accession: I46585  
 A;Status: preliminary; translated from GB/EMBL/DDJB  
 A;Molecule type: mRNA  
 A;Keywords: pituitary  
 A;Superfamily: prolactin  
 C;Keywords: prolactin  
 F;1-26/Domain: signal sequence #status Predicted <SIG>  
 F;27-216/Product: somatotropin #status Predicted <MAT>  
 A;Cross-references: GB:M22761; NID:9164479; PID:9164480  
 R;Name: B.Zh.; Zhou, S.W.; Qi, S.Z.  
 Chinese J. Biotechnol. 8, 318-323, 1992  
 A;Title: Cloning and partly sequencing of the porcine growth hormone (pGH) gene from pituitary. *PMID:31046.1*; *PMID:9164481*  
 A;Reference number: PC1063  
 A;Accession: PC1063  
 A;Molecule type: mRNA  
 A;Residues: 97-108, 'E', 110-158 <YAN>  
 A;Experimental source: Pituitary  
 R;Mails, J.B.; Howard, S.C.; Scapa, S.; Wilhelm, A.E.  
 J. Biol. Chem. 245, 3407-3415, 1970  
 A;Title: Cyanogen bromide cleavage and partial amino acid sequence of porcine growth hormone. *PMID:4918150*  
 A;Reference number: A01516; *PMID:4918150*  
 A;Molecule type: protein  
 A;Residues: 27-30;149-194, 'N', 196-216 <ML>  
 R;Mails, J.B.  
 Submitted to the Atlas, May 1971  
 A;Reference number: A94594  
 A;Accession: A94594  
 A;Molecule type: protein  
 A;Residues: 140-148 <ML2>  
 C;Genetics:  
 A;Gene: Gh  
 A;Introns: 4/1; 57/3; 96/3; 150/3  
 C;Superfamily: prolactin  
 C;Keywords: anterior pituitary; growth factor; hormone  
 F;1-26/Domain: signal sequence #status Predicted <SIG>  
 F;27-216/Product: somatotropin #status Predicted <MAT>  
 F;78-189/Disulfide bonds: #status Predicted <DISL>  
 F;206-214/Disulfide bonds: #status experimental  
 Query Match Score 694; DB 1; Length 216;  
 Best Local Similarity 64.1%; Pred. No. 2.7e-56;  
 Matches 139; Conservative 20; Mismatches 42; Indels 16; Gaps 3;

1 MATGSRSLIIFAGLICLPLWQEGSAPPTIPLSRLFDNASLRAHRIHQLAFTYQFF-- 57  
 1 MAAGPRTSALLAFAALLCLPWPQEAVGAPAMPSSLPAANAVRAQHIIHQLAFTYKFERA 60  
 58 -----NPQTSICFSSEIPTPSNREETQKSNLLELRLRISLIIQSMLEPYQFLRS 106  
 61 YIPEGGQYSQNAQAFCSSETIPLAPGKDEAQQRSDVELLRFSLLIIQSMLWPQFLSR 120  
 107 VFAWSLVYGAQDSNVYDLDKDEEGIQTMLGRLEDGSPTQIIFRTQYSKEDTNSHDDA 166  
 121 VFTNSLIVFGTSD-RVYEKLKDLEEGIQLAMRELEQDSPRGQQLKTYDKEFTNLRSDDA 179  
 167 LLKNYGILYCFRKDMKVEFLRIVQCRS-VEGSCGF 202  
 180 LLKNYGILSCLCFRKDHLKAETYLVRMCKRFRVESSCAF 216

RESULT 14  
 somatotropin precursor - cat  
 N;Alternate names: growth hormone  
 N;Species: *Felis silvestris catus* (domestic cat)  
 C;Date: 10-Apr-1996 #sequence\_revision 24-May-1996 #text\_change 16-Jul-1999  
 C;Accession: JC4632  
 R;Warren, W.C.; Bentle, K.A.; Bogosian, G.  
 Gene 168, 247-249, 1996  
 A;Title: Cloning of the cDNAs coding for cat growth hormone and prolactin.  
 A;Reference number: JC4631; *PMID:96194906*; *PMID:8654953*  
 A;Accession: JC4632  
 A;Molecule type: mRNA

A;Residues: 1-216 <WAR>  
 A;Cross-references: GB:U25973; NID:9825768; PID:AAA67294.1; *PMID:9825769*  
 A;Experimental source: pituitary  
 C;Genetics:  
 A;Gene: Gh  
 C;Superfamily: prolactin  
 C;Keywords: pituitary  
 F;1-26/Domain: signal sequence #status Predicted <SIG>  
 F;27-216/Product: somatotropin #status Predicted <MAT>  
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 Best Local Similarity 63.6%; Pred. No. 1.2e-55;  
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 1 MATGSRSLIIFAGLICLPLWQEGSAPPTIPLSRLFDNASLRAHRIHQLAFTYQFF-- 57  
 1 MAAGPRTSALLAFAALLCLPWPQEAVGAPAMPSSLPAANAVRAQHIIHQLAFTYKFERA 60  
 58 -----NPQTSICFSSEIPTPSNREETQKSNLLELRLRISLIIQSMLEPYQFLRS 106  
 61 YIPEGGQYSQNAQAFCSSETIPLAPGKDEAQQRSDVELLRFSLLIIQSMLWPQFLSR 120  
 107 VFAWSLVYGAQDSNVYDLDKDEEGIQTMLGRLEDGSPTQIIFRTQYSKEDTNSHDDA 166  
 121 VFTNSLIVFGTSD-RVYEKLKDLEEGIQLAMRELEQDSPRGQQLKTYDKEFTNLRSDDA 179  
 167 LLKNYGILYCFRKDMKVEFLRIVQCRS-VEGSCGF 202  
 180 LLKNYGILSCLCFRKDHLKAETYLVRMCKRFRVESSCAF 216



GenCore version 5.1.6  
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protein - protein search, using sw model

on: July 12, 2004, 13:05:28 ; Search time 51 Seconds  
 (without alignments)

1235.441 Million cell updates/sec

title: US-09-856-796B-2  
 sequence score: 1047  
 sequence: 1 MATGSRSTLILAFGILCLPW.....KVETFLRIVQCRSVEGSCGF 202

oring table: BLOSUM62  
 Gapop 10.0 , Gapext 0.5

searched: 1279676 seqs, 31191843 residues

total number of hits satisfying chosen parameters: 1279676

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

Minimum DB seq length: 0  
 Maximum DB seq length: 2000000000

st-processing: Minimum Match 0%  
 Maximum Match 100%  
 Listing First 45 summaries

Published Applications AA:\*

- 1: /cgn2\_6/ptodata/2/pubpaas/US07\_PUBCOMB.pep:\*
- 2: /cgn2\_6/ptodata/2/pubpaas/PTC\_NEW\_PUB\_PEP:\*
- 3: /cgn2\_6/ptodata/2/pubpaas/US06\_NEW\_PUB\_PEP:\*
- 4: /cgn2\_6/ptodata/2/pubpaas/US05\_PUBCOMB.pep:\*
- 5: /cgn2\_6/ptodata/2/pubpaas/US07\_NEW\_PUB\_PEP:\*
- 6: /cgn2\_6/ptodata/2/pubpaas/PTCUS\_PUBCOMB.pep:\*
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- 9: /cgn2\_6/ptodata/2/pubpaas/US09\_PUBCOMB.pep:\*
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- 11: /cgn2\_6/ptodata/2/pubpaas/US09\_PUBCOMB.pep:\*
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- 16: /cgn2\_6/ptodata/2/pubpaas/US10\_NEW\_PUB\_PEP:\*
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- 18: /cgn2\_6/ptodata/2/pubpaas/US60\_PUBCOMB.pep:\*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ALIGNMENTS

RESULT 1  
 US-09-853-688-2

i Sequence 2, Application US/09853688  
 ; Patent No. US2002081605A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: COOPER, DAVID N.  
 ; APPLICANT: PROCTER, ANNIE M.  
 ; APPLICANT: GREGORY, JOHN  
 ; APPLICANT: MILLAR, DAVID S.  
 ; TITLE OF INVENTION: METHOD FOR DETECTING GROWTH HORMONE VARIATIONS IN HUMANS, THE VARIATIONS AND THEIR USES  
 ; FILE REFERENCE: WCM78  
 ; CURRENT APPLICATION NUMBER: US/09/853,688  
 ; CURRENT FILING DATE: 2001-05-14  
 ; NUMBER OF SEQ ID NOS: 66  
 ; SOFTWARE: Patentin Ver. 2.1  
 ; SEQ ID NO: 2  
 ; LENGTH: 217  
 ; TYPE: PRT  
 ; ORGANISM: Homo sapiens  
 US-09-853-688-2

SUMMARIES

Query Match Length DB ID Description

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2	1029.5	98.3	217	9 US-09-853-688-2	Sequence 4, Appli
3	1029.5	98.3	217	9 US-09-853-688-4	Sequence 4, Appli
4	1024.5	97.9	217	9 US-09-949-948-4	Sequence 9, Appli
5	1017.5	97.2	217	9 US-09-804-402A-16	Sequence 16, Appli
6	1017.5	97.2	217	12 US-10-411-037-48	Sequence 48, Appli
7	1017.5	97.2	217	12 US-10-411-036-48	Sequence 48, Appli
8	1017.5	97.2	217	16 US-10-410-062-48	Sequence 48, Appli
9	1017.5	97.2	217	16 US-10-411-049-48	Sequence 48, Appli
10	1017.5	97.2	217	16 US-10-410-030-48	Sequence 48, Appli
11	977.2	217	16	US-10-410-030-48	Sequence 48, Appli
12	898.5	85.8	197	12 US-10-621-093-47	Sequence 47, Appli
13	898.5	85.8			

QY 166 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 202  
 Db 181 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 217

RESULT 2  
 US-09-853-688-4  
*i* Sequence 4, Application US/09853688  
*i* Patent No. US20020081605A1  
*i* GENERAL INFORMATION:  
*i* APPLICANT: COOPER, DAVID N.  
*i* APPLICANT: GREGORY, JOHN  
*i* APPLICANT: MILLAR, DAVID S.  
*i* TITLE OF INVENTION: METHOD FOR DETECTING GROWTH HORMONE VARIATIONS IN HUMANS, THE VARIATIONS AND THEIR USES  
*i* FILE REFERENCE: WCM78  
*i* CURRENT APPLICATION NUMBER: US/09/853, 688  
*i* CURRENT FILING DATE: 2001-05-14  
*i* NUMBER OF SEQ ID NOS: 66  
*i* SOFTWARE: Patentin Ver. 2.1  
*i* SEQ ID NO: 4  
*i* LENGTH: 217  
*i* TYPE: PRT  
*i* ORGANISM: Homo sapiens  
 US-09-853-688-4

Query Match 98.3%; Score 1029.5; DB 9; Length 217;  
 Best Local Similarity 93.1%; Pred. No. 2.5e-99;  
 Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

QY 1 MATGSRSLILAAFGGLCLPWLQEGSAFPTIPLSLRFDNASLRAHRLHQLAFTDYEKF--- 57  
 Db 1 MATGSRSLILAAFGGLCLPWLQEGSAFPTIPLSLRFDNASLRAHRLHQLAFTDYEKFGEA 60

QY 58 -----NPOTSLCSEPSLTPSNREETQOKSNLELLRLSILLIOSWLEPVQFLR 105  
 Db 61 YIPKEQKYSFLQNPOTSLCSEPSLTPSNREETQOKSNLELLRLSILLIOSWLEPVQFLR 120

QY 106 SVFANSLVYGAQDSNVYDILKDLLEGQIOTLGRLEDGSPTGQIFKQTYSKFDTNSHND 165  
 Db 121 SVFANSLVYGAQDSNVYDILKDLLEGQIOTLGRLEDGSPTGQIFKQTYSKFDTNSHND 180

QY 166 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 202  
 Db 181 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 217

RESULT 4  
 US-09-929-918-9  
*i* Sequence 9, Application US/09929918  
*i* Patent No. US20020090678A1  
*i* GENERAL INFORMATION:  
*i* APPLICANT: Kordym, Vitaliy A.  
*i* APPLICANT: Chernykh, Svitlana I.  
*i* APPLICANT: Slavchenko, Iryna Yu.  
*i* APPLICANT: Vozianov, Oleksandr  
*i* TITLE OF INVENTION: PHAGE-OBPDENT SUPER PRODUCTION OF BIOLGICALLY ACTIVE PROTEIN AND PEPTIDES  
*i* FILE REFERENCE: PHAGE 006A  
*i* CURRENT APPLICATION NUMBER: US/09/929, 918  
*i* CURRENT FILING DATE: 2001-08-15  
*i* PRIOR APPLICATION NUMBER: 09/318, 288  
*i* PRIOR FILING DATE: 1999-05-25  
*i* NUMBER OF SEQ ID NOS: 11  
*i* SOFTWARE: FastSEQ for Windows Version 4.0  
*i* SEQ ID NO: 9  
*i* LENGTH: 217  
*i* TYPE: PRT  
*i* ORGANISM: Homo sapiens  
 US-09-929-918-9

Query Match 97.9%; Score 1024.5; DB 9; Length 217;  
 Best Local Similarity 92.8%; Pred. No. 8.4e-99;  
 Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1;

QY 1 MATGSRSLILAAFGGLCLPWLQEGSAFPTIPLSLRFDNASLRAHRLHQLAFTDYEKF--- 57  
 Db 1 MATGSRSLILAAFGGLCLPWLQEGSAFPTIPLSLRFDNASLRAHRLHQLAFTDYEKFEEA 60

QY 58 -----NPOTSLCSEPSLTPSNREETQOKSNLELLRLSILLIOSWLEPVQFLR 105  
 Db 61 YIPKEQKYSFLQNPOTSLCSEPSLTPSNREETQOKSNLELLRLSILLIOSWLEPVQFLR 120

QY 106 SVFANSLVYGAQDSNVYDILKDLLEGQIOTLGRLEDGSPTGQIFKQTYSKFDTNSHND 165  
 Db 121 SVFANSLVYGAQDSNVYDILKDLLEGQIOTLGRLEDGSPTGQIFKQTYSKFDTNSHND 180

QY 166 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 202  
 Db 181 ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF 217

RESULT 3  
 US-09-969-748C-4  
*i* Sequence 4, Application US/09969748C  
*i* Publication No. US20030161809A1  
*i* GENERAL INFORMATION:  
*i* APPLICANT: ARIZENE PHARMACEUTICALS, INC.  
*i* APPLICANT: HOUSTON, Lou, L.  
*i* APPLICANT: SHERIDAN, Phillip, J.  
*i* APPLICANT: HAWLEY, Stephen  
*i* APPLICANT: GLYNN, Jacqueline, M.  
*i* APPLICANT: CHAPIN, Steven  
*i* APPLICANT: BASU, Amarsesh  
*i* TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR THE TRANSPORT OF BIOLOGICALLY ACTIVE AGENTS ACROSS CELLULAR BARRIERS  
*i* FILE REFERENCE: 037220-0303  
*i* CURRENT APPLICATION NUMBER: US/09/969 748C  
*i* CURRENT FILING DATE: 2002-12-10  
*i* PRIOR APPLICATION NUMBER: US 60/267, 601  
*i* PRIOR FILING DATE: 2001-02-09  
*i* PRIOR APPLICATION NUMBER: US 60/248, 819  
*i* PRIOR FILING DATE: 2000-11-14  
*i* PRIOR APPLICATION NUMBER: US 60/248, 478  
*i* PRIOR FILING DATE: 2000-11-13  
*i* PRIOR APPLICATION NUMBER: US 60/237, 929  
*i* PRIOR FILING DATE: 2000-10-02

RESULT 5  
 US-09-804-409A-16  
 / Sequence 16, Application US/09804409A  
 / Patent No. US20020155100A1  
 / GENERAL INFORMATION:  
 / APPLICANT: KIEFER, TIMOTHY J.  
 / APPLICANT: CHEUNG, ANTHONY T.  
 / TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR REGULATED PROTEIN EXPRESSION IN GUT  
 / FILE REFERENCE: 0299196/027 8721  
 / CURRENT APPLICATION NUMBER: US/09/804,409A  
 / CURRENT FILING DATE: 2001-03-12  
 / NUMBER OF SEQ ID NOS: 18  
 / SOFTWARE: PatentIn Ver. 2.1  
 / SEQ ID NO 16  
 / LENGTH: 217  
 / TYPE: PRT  
 / ORGANISM: Homo sapiens  
 / US-09-804-409A-16

Query Match 97.2%; Score 1017.5; DB 12; Length 217;  
 Best Local Similarity 92.2%; Pred. No. 4.5e-98;  
 Matches 200; Conservative 0; Mismatches 2; Indels 15; Gaps 1;  
 US-10-411-037-48

Qy 1 MATGSRSLIAGLCLIPWQEGSAAPTIPSLRSLFDNASLRAHRLHQALADTYQEEF--- 57  
 Db 1 MATGSRSLIAGLCLIPWQEGSAAPTIPSLRSLFDNASLRAHRLHQALADTYQEEF--- 60  
 Qy 58 -----NPQTSCLCFSSESIPPSNRRETOQKSNLELRISLILQSLPEVQFLR 105  
 Db 61 YIPKEQKYSFLQNPOQSLCFSSESIPPSNRRETOQKSNLELRISLILQSLPEVQFLR 120

Qy 106 SVFANSILVYGASDSNYDLDLKDLEGQTLMRGLEDSPRTGQIFQTYSKFDTNSHND 165  
 Db 121 SVFANSILVYGASDSNYDLDLKDLEGQTLMRGLEDSPRTGQIFQTYSKFDTNSHND 180

Qy 166 ALLKNGGLYCFRKDMKDVKETFLRIVQCRSVEGSCGF 202  
 Db 181 ALLKNGGLYCFRKDMKDVKETFLRIVQCRSVEGSCGF 217

RESULT 7  
 US-10-411-026-48  
 / Sequence 48, Application US/104111026  
 / Publication No. US2004006391A1  
 / GENERAL INFORMATION:  
 / APPLICANT: Neose Technologies, Inc.  
 / DeFrees, Shawn  
 / Zopf, David  
 / APPLICANT: Bayer, Robert  
 / APPLICANT: Hakes, David  
 / APPLICANT: Chen, Xi  
 / TITLE OF INVENTION: PROTEIN REMODELING METHODS AND PROTEINS/PEPTIDES PRODUCED BY THE  
 / FILE REFERENCE: 040853-01-5053  
 / CURRENT APPLICATION NUMBER: US/10/411,026  
 / CURRENT FILING DATE: 2003-04-09  
 / PRIORITY APPLICATION NUMBER: US 60/328,523  
 / PRIORITY FILING DATE: 2001-10-10  
 / PRIORITY APPLICATION NUMBER: US 60/344,692  
 / PRIORITY FILING DATE: 2001-10-19  
 / PRIORITY APPLICATION NUMBER: US 60/387,292  
 / PRIORITY FILING DATE: 2000-06-07  
 / PRIORITY APPLICATION NUMBER: US 60/391,777  
 / PRIORITY FILING DATE: 2002-06-25  
 / PRIORITY APPLICATION NUMBER: US 60/396,594  
 / PRIORITY FILING DATE: 2002-07-17  
 / PRIORITY APPLICATION NUMBER: US 60/404,249  
 / PRIORITY FILING DATE: 2002-08-16  
 / PRIORITY FILING DATE: 2002-08-28  
 / NUMBER OF SEQ ID NOS: 75  
 / SOFTWARE: PatentIn version 3.2  
 / SEQ ID NO 48  
 / LENGTH: 217  
 / TYPE: PRT  
 / ORGANISM: Homo sapiens  
 / US-10-411-026-48

Query Match 97.2%; Score 1017.5; DB 12; Length 217;  
 Best Local Similarity 92.2%; Pred. No. 4.5e-98;  
 Matches 200; Conservative 0; Mismatches 2; Indels 15; Gaps 1;  
 US-10-411-026-48

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Db 1 MATGSRSTILLAFGLLCLPFWLQEGSAFFPTIPLSRPFDNAMLRAHRLHQLADTYQEFEAA 60

Qy 58 -----NPQTSCLFSESSEPTPSNREETQKSNEELLRLISLLIQSWLEPVQFLR 105

Db 61 YIPKEQKYSFLQNPQTSCLFSESSEPTPSNREETQKSNEELLRLISLLIQSWLEPVQFLR 120

Qy 106 SYFANSVYGAQDSDNYDQLKLDEGIGTQMLGRLEDGSPTQIIFKOTYSKFDTNSHND 165

Db 121 SVFANSVYGAQDSDNYDQLKLDEGIGTQMLGRLEDGSPTQIIFKOTYSKFDTNSHND 180

Db 121 SVFANSVYGAQDSDNYDQLKLDEGIGTQMLGRLEDGSPTQIIFKOTYSKFDTNSHND 180

Qy 166 ALLKNYGLLYCPRKDMKVEFTRIVCRSVBGSCKF 202

Db 181 ALLKNYGLLYCPRKDMKVEFTRIVCRSVBGSCKF 217

Db 181 ALLKNYGLLYCPRKDMKVEFTRIVCRSVBGSCKF 217

RESULT 9

US-10-411-049-48

Sequence 48, Application US/10411049

Publication No. US20040083026A1

GENERAL INFORMATION:

Applicant: Neose Technologies, Inc.

DeFrees, Shawn

Applicant: Zopf, David

Applicant: Bayer, Robert

Applicant: Hakes, David

Applicant: Chen, Xi

Applicant: Bowe, Caryn

Title of Invention: INTERFERON ALPHA: REMODELING AND GLYCOCOCONJUGATION OF INTERFERON

Title of Invention: ALPHA

File Reference: 04053-01-5055

Current Application Number: US/10/411,049

Current Filing Date: 2003-04-09

Prior Application Number: US 60/328,523

Prior Filing Date: 2001-01-10

Prior Application Number: US 60/344,692

Prior Filing Date: 2001-10-19

Prior Application Number: US 60/387,292

Prior Filing Date: 2002-06-07

Prior Application Number: US 60/391,777

Prior Filing Date: 2002-06-25

Prior Application Number: US 60/396,594

Prior Filing Date: 2002-07-17

Prior Application Number: US 60/404,249

Prior Filing Date: 2002-08-16

Prior Application Number: US 60/407,527

Prior Filing Date: 2002-09-28

Number of SEQ ID NOS: 75

Software: PatentIn version 3.2

SEQ ID NO: 48

Length: 217

Type: PRT

Organism: Homo sapiens

US-10-411-049-48

Query Match 97.2%; Score 1017.5; DB 16; Length 217;

Best Local Similarity 92.2%; Pred. No. 4.5e-98;

Matches 200; Conservative 0; Mismatches 2; Indels 15; Gaps 1;

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Qy 58 -----NPOTSLCFSSESSEPTPSNREETQKSNEELLRLISLLIQSWLEPVQFLR 105

Db 61 YIPKEQKYSFLQNPQTSCLFSESSEPTPSNREETQKSNEELLRLISLLIQSWLEPVQFLR 120

Qy 106 SYFANSVYGAQDSDNYDQLKLDEGIGTQMLGRLEDGSPTQIIFKOTYSKFDTNSHND 165

Db 121 SYFANSVYGAQDSDNYDQLKLDEGIGTQMLGRLEDGSPTQIIFKOTYSKFDTNSHND 180

Qy 166 ALLKNYGLLYCPRKDMKVEFTRIVCRSVBGSCKF 202

Db 181 ALLKNYGLLYCPRKDMKVEFTRIVCRSVBGSCKF 217

RESULT 10

US-10-410-930-48

Sequence 48, Application US/10410930

Publication No. US20040115168A1

GENERAL INFORMATION:

Applicant: Neose Technologies, Inc.

DeFrees, Shawn

Applicant: Zopf, David

Applicant: Bayer, Robert

Applicant: Hakes, David

Applicant: Chen, Xi

Applicant: Bowe, Caryn

```

; APPLICANT: Bowe, Caryn
; TITLE OF INVENTION: INTERFERON BETA: REMODELING AND GLYCOCONJUGATION OF INTERFERON
; FILE REFERENCE: 040853-01-5056
; CURRENT APPLICATION NUMBER: US/10/410,930
; CURRENT FILING DATE: 2003-04-09
; PRIOR APPLICATION NUMBER: US 60/328,523
; PRIOR FILING DATE: 2001-10-10
; PRIOR APPLICATION NUMBER: US 60/344,692
; PRIOR FILING DATE: 2001-10-19
; PRIOR APPLICATION NUMBER: US 60/387,292
; PRIOR FILING DATE: 2002-06-07
; PRIOR APPLICATION NUMBER: US 60/311,777
; PRIOR FILING DATE: 2002-06-25
; PRIOR APPLICATION NUMBER: US 60/396,594
; PRIOR FILING DATE: 2002-07-17
; PRIOR APPLICATION NUMBER: US 60/404,249
; PRIOR FILING DATE: 2002-08-16
; PRIOR APPLICATION NUMBER: US 60/407,527
; PRIOR FILING DATE: 2002-08-28
; NUMBER OF SEQ ID NOS: 75
; SOFTWARE: Patentin version 3.2
; SEQ ID NO: 48
; LENGTH: 217
; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-410-930-48

Query Match 97.2%; Score 1017.5; DB 16; Length 217;
Best Local Similarity 92.2%; Pred. No. 4_5e-98; Mismatches 2; Indels 15; Gaps 1;
Matches 200; Conservative 0; Pairs 1; Gaps 1;

Qy 1 MATGSRSTSLIAGLGLCPWLGSAFTIPLSRLLFDNASLRLAFLDFTYQEF--- 57
Db 1 MATGSRSTSLIAGLGLCPWLGSAFTIPLSRPFDNAMLRPRLHQIADFDTYQEFEEA 60

Qy 58 -----NPQTSLCFSSEIPLTPRNREEIQQSNLELLRLISLILIQSWEPVQFLR 105
Db 61 YIPEQKQYSFLQNPQTSLCFSSEIPLTPRNREEIQQSNLELLRLISLILIQSWEPVQFLR 120

Qy 106 SVFANSLVYGAASDNYYDLLKDLDEEGIOTLMGRLEDGSPTGQIFKOTYSKEFTNSHND 165
Db 121 SVFANSLVYGAASDNYV DLLKDLDEEGIOTLMGRLEDGSPTGQIFKOTYSKEFTNSHND 180

Qy 166 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVSVEGSGF 202
Db 181 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVSVEGSGF 217

RESULT 11
US-10-410-997-48
; Sequence 48, Application US/10/410997
; Publication No. US20040126838A1
; GENERAL INFORMATION
; APPLICANT: Neose Technologies, Inc.
; APPLICANT: Defrees, Shawn
; APPLICANT: Zopf, David
; APPLICANT: Bayer, Robert
; APPLICANT: Hakes, David
; APPLICANT: Chen, Xi
; APPLICANT: Bowe, Caryn
; TITLE OF INVENTION: FSH
; FILE REFERENCE: 040853-01-5059
; CURRENT APPLICATION NUMBER: US/10/410,997
; CURRENT FILING DATE: 2003-04-09
; PRIOR APPLICATION NUMBER: US 60/328,523
; PRIOR FILING DATE: 2001-10-10
; PRIOR APPLICATION NUMBER: US 60/344,692
; PRIOR FILING DATE: 2001-10-19
; PRIOR APPLICATION NUMBER: US 60/387,292
; PRIOR FILING DATE: 2002-06-07
; PRIOR APPLICATION NUMBER: US 60/391,777

```

```

RESULT 13
US-10-621-693-45
; Sequence 45, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Buswell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEINS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO: 45
; LENGTH: 198
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
; US-10-621-693-45

Query Match          85.8%;  Score 898.5;  DB 12;  Length 198;
Best Local Similarity 90.7%;  Prod. No. 1.2e-85;  1;
Matches 176;  Conservative 1;  Mismatches 2;  Indels 15;  Gaps 1;
;-----NPOTSLCFSES 68
;-----NPOTSLCFSES 63
Qy  24  GSAFPPTIPLSRFLDNASLRAHRLHQLAFTQYQEF- 1
Db   4  GGSFPPTIPLSRFLDNAMLRRAHRLHQLAFTQYQEF-EAYTPKEQKYSFLQNPQTSLCFSES 63
;-----NPOTSLCFSES 128
;-----NPOTSLCFSES 123
Qy  69  ITPPSNRBETQKSNLLELRISLILQSLPEVPLRSYFANSLYVGASDSNVYDLLKDL 128
Db   64  ITPPSNRBETQKSNLLELRISLILQSLPEVPLRSYFANSLYVGASDSNVYDLLKDL 123
;-----NPOTSLCFSES 188
;-----NPOTSLCFSES 183
Qy  129  BEGQTQTMGRLEDSPRTGQIFQKOTYSKEDTNSHNDALLKNYGLYCFRKDMKVTFL 188
Db  124  BEGQTQTMGRLEDSPRTGQIFQKOTYSKEDTNSHNDALLKNYGLYCFRKDMKVTFL 183
;-----NPOTSLCFSES 202
;-----NPOTSLCFSES 197
Qy  189  RIVQCRSYVEGSCGF 202
Db  184  RIVQCRSYVEGSCGF 197

RESULT 14
US-10-621-693-51
; Sequence 51, Application US/10621693
; Publication No. US20040059093A1
; GENERAL INFORMATION:
; APPLICANT: Gentide Biopharmaceuticals, Inc.
; APPLICANT: Buswell, Stuart
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEINS
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS
; FILE REFERENCE: GNT-00101.P.1-US
; CURRENT APPLICATION NUMBER: US/10/621,693
; CURRENT FILING DATE: 2003-07-16
; PRIOR APPLICATION NUMBER: US 60/396,466
; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO: 51
; LENGTH: 391
; TYPE: PRT
; ORGANISM: Artificial

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Db 184 RIVQCRSTBGSCKF 197  
||||| | | | | | | | | | | | | |

Search completed: July 12, 2004, 13:11:23  
Job time : 51 secs



GenCore version 5.1.6  
 Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model 1

Run on: July 12, 2004, 13:02:48 ; Search time: 22 Seconds  
 (without alignments) ; 474.020 Million cell updates/sec

Title: US-09-856-796B-2

Perfect score: 1047

Sequence: 1 MATGSRSTLILAFGLICLFW.....KVETFLRIVQCRSVEGSCGP 202

Scoring table: BLOSUM62

Gapext: 0.5

Searched: 389414 seqs, 5165971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Maximum Match 0%  
 Listing first 45 summaries

Database : Issued Patents AA:  
 1: /cgn2\_6\_ptodata/2/iaa/5a\_COMB.pep:/\*  
 2: /cgn2\_6\_ptodata/2/iaa/5a\_COMB.pep:/\*  
 3: /cgn2\_6\_ptodata/2/iaa/5a\_COMB.pep:/\*  
 4: /cgn2\_6\_ptodata/2/iaa/6b\_COMB.pep:/\*  
 5: /cgn2\_6\_ptodata/2/iaa/PCUTS\_COMB.pep:/\*  
 6: /cgn2\_6\_ptodata/2/iaa/backfiles1.pep:/\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

RESULTS

Result No.	Score	Query	Match	Length	DB ID	Description
1	1029.5	98.3	217	1	US-09-469-486-51	Sequence 51, Appl
2	1029.5	98.3	217	2	US-09-469-658-51	Sequence 51, Appl
3	1024.5	97.9	217	3	US-09-589-028-10	Sequence 10, Appl
4	1024.5	97.9	217	3	US-09-784-582-10	Sequence 10, Appl
5	1024.5	97.9	217	3	US-09-785-271-10	Sequence 10, Appl
6	1024.5	97.9	217	3	US-09-759-628-11	Sequence 11, Appl
7	1024.5	97.9	217	4	US-09-284-878-1	Sequence 1, Appl
8	1024.5	97.9	217	4	US-09-511-024A-1	Sequence 1, Appl
9	1016.5	97.1	217	1	US-09-187-756C-4	Sequence 4, Appl
10	1016.5	97.1	217	2	US-09-324A-4	Sequence 4, Appl
11	1016.5	97.1	217	4	US-09-411-657-4	Sequence 4, Appl
12	999	95.4	198	1	US-09-187-756C-5	Sequence 5, Appl
13	999	95.4	198	2	US-09-324A-5	Sequence 5, Appl
14	999	95.4	198	4	US-09-411-657-5	Sequence 5, Appl
15	926.5	88.5	360	3	US-09-784-582-73	Sequence 73, Appl
16	924.5	88.3	274	3	US-09-784-582-71	Sequence 71, Appl
17	914	87.3	176	3	US-09-791-728-2	Sequence 2, Appl
18	914	87.3	176	4	US-09-990-774-2	Sequence 2, Appl
19	909	86.8	176	3	US-09-728-1	Sequence 1, Appl
20	909	86.8	176	4	US-09-990-774-1	Sequence 1, Appl
21	896.5	85.6	191	4	US-09-465-461-1	Sequence 1, Appl
22	891.5	85.1	191	4	US-09-284-878-5	Sequence 5, Appl
23	891.5	85.1	191	4	US-09-462-941-1	Sequence 1, Appl
24	891.5	85.1	192	1	US-09-3-383-1	Sequence 1, Appl
25	891.5	85.1	194	2	US-09-621-4	Sequence 4, Appl
26	891.5	85.1	194	3	US-09-459-906-4	Sequence 4, Appl
27	891.5	85.1	241	4	US-09-424-620B-25	Sequence 25, Appl

ALIGNMENTS

Result 1	US-08-469-486-51	Sequence 51, Application US/08469486
; Patent No. 5739281		
; GENERAL INFORMATION:		
; APPLICANT: Thoegersen, Hans Christian		
; APPLICANT: Holte, Thor Las		
; TIME OF INVENTION: Improved method for the refolding of		
; NUMBER OF SEQUENCES: 58		
; CORRESPONDENCE ADDRESS:		
; ADDRESSEE: Fish & Richardson		
; STREET: 225 Franklin Street		
; CITY: Boston		
; STATE: Massachusetts		
; COUNTRY: USA		
; ZIP: 02110-2804		
; COMPUTER READABLE FORM:		
; MEDIUM TYPE: Floppy disk		
; COMPUTER: IBM PC compatible		
; OPERATING SYSTEM: PC-DOS/MS-DOS		
; SOFTWARE: PatentIn Release #1.0, Version		
; SOFTWARE: #1.25		
; CURRENT APPLICATION DATA:		
; APPLICATION NUMBER: US/08/469,486		
; FILING DATE:		
; CLASSIFICATION: 530		
; PRIOR APPLICATION DATA:		
; APPLICATION NUMBER: 08/192,060		
; FILING DATE: February 4, 1994		
; ATTORNEY/AGENT INFORMATION:		
; NAME: Paul T. Clark		
; REGISTRATION NUMBER: 30,162		
; REFERENCE DOCKET NUMBER: 06363/002001		
; TELECOMMUNICATION INFORMATION:		
; TELEPHONE: 617 542 5070		
; TELEFAX: 617 542 8906		
; TELEX: 200154		
; INFORMATION FOR SEQ ID NO: 51:		
; SEQUENCE CHARACTERISTICS:		
; LENGTH: 217 amino acids		
; TYPE: amino acid		
; STRANDEDNESS:		
; TOPOLOGY: linear		
; MOLECULE TYPE: protein		
; US-08-469-486-51		
; Query Match 98.3% ; Score 1029.5 ; DB 1 ; Pred. No. 1.4e-108 ; Length 217;		
; Best Local Similarity 93.1% ; Pred. No. 1.4e-108 ;		

Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

Db 1 MATGSRSTLLAFLGILCPWQEGSAFTPLSRFLFDNASLRAHRLHQIAFDTYQEEA 60

Qy 1 MATGSRSTLLAFLGILCPWQEGSAFTPLSRFLFDNASLRAHRLHQIAFDTYQEEF-- 57

Db 1 MATGSRSTLLAFLGILCPWQEGSAFTPLSRFLFDNASLRAHRLHQIAFDTYQEEA 60

Qy 58 -----NPQTSLCSESIPPSNREETQKSNLLELRISLILLIQSWLEPVQFLR 105

Db 61 YIPKEQKYSFLQNQTSLCSESIPPSNREETQKSNLLELRISLILLIQSWLEPVQFLR 120

Qy 61 YIPKEQKYSFLQNQTSLCSESIPPSNREETQKSNLLELRISLILLIQSWLEPVQFLR 105

Db 106 SVFANSLVGASDNYVTDLKDLEGQTQMLGRLEGSPRTGQIKOTYSKPDTSNHND 165

Qy 106 SVFANSLVGASDNYVTDLKDLEGQTQMLGRLEGSPRTGQIKOTYSKPDTSNHND 165

Db 121 SVFANSLVGASDNYVTDLKDLEGQTQMLGRLEGSPRTGQIKOTYSKPDTSNHND 180

Qy 121 SVFANSLVGASDNYVTDLKDLEGQTQMLGRLEGSPRTGQIKOTYSKPDTSNHND 180

Db 166 ALLKNYGLYCFRKDMKDVKETFLRIVQCRSVEGSCGF 202

Qy 166 ALLKNYGLYCFRKDMKDVKETFLRIVQCRSVEGSCGF 202

Db 181 ALLKNYGLYCFRKDMKDVKETFLRIVQCRSVEGSCGF 217

Db RESULT 3

US-08-589-028-10

; Sequence 10, Application US/08589028

; GENERAL INFORMATION:

; APPLICANT: Newgard, Christopher B.

; APPLICANT: Halban, Philippe

; APPLICANT: No. 6087129mington, Karl D.

; APPLICANT: Clark, Samuel A.

; APPLICANT: Thispen, Anice E.

; APPLICANT: Quaide, Christian

; APPLICANT: Kruse, Fred

; TITLE OF INVENTION: Recombinant Expression of Proteins From

; TITLE OF INVENTION: recombinant Expression of Proteins From

; NUMBER OF SEQUENCES: 50

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: Arnold, White & Durkee

; STREET: P. O. Box 4433

; STATE: TX

; CITY: Houston

; COUNTRY: USA

; ZIP: 77210-4433

; COMPUTER READABLE FORM:

; MEDIUM TYPE: Floppy disk

; COMPUTER: IBM PC compatible

; OPERATING SYSTEM: PC-DOS/MS-DOS

; SOFTWARE: Patent/InRelease #1.0, Version #1.30

; CURRENT APPLICATION DATA:

; APPLICATION NUMBER: US/08/589,028

; FILING DATE: Concurrently Herewith

; CLASSIFICATION: 435

; ATTORNEY/AGENT INFORMATION:

; NAME: Highlander, Steven L.

; REGISTRATION NUMBER: 47,642

; REFERENCE/DOCKET NUMBER: UTSD:426\HYL

; TELECOMMUNICATION INFORMATION:

; TELEPHONE: (512) 418-3000

; TELEFAX: (512) 474-7577

; INFORMATION FOR SEQ ID NO: 10:

; SEQUENCE CHARACTERISTICS:

; LENGTH: 217 amino acids

; TYPE: amino acid

; STRANDEDNESS:

; TOPOLOGY: linear

US-08-589-028-10

Query Match 97.9%; Score 1029.5; DB 3; Length 217;

Best Local Similarity 92.6%; Pred. No. 51e-108; Mismatches 0; Indels 15; Gaps 1;

Db 1 MATGSRSTLLAFLGILCPWQEGSAFTPLSRFLFDNASLRAHRLHQIAFDTYQEEA 60

Qy 58 -----NPQTSLCSESIPPSNREETQKSNLLELRISLILLIQSWLEPVQFLR 105

Db 1 MATGSRSTLLAFLGILCPWQEGSAFTPLSRFLFDNASLRAHRLHQIAFDTYQEEA 60

Qy 61 YIPKEQKYSFLQNQTSLCSESIPPSNREETQKSNLLELRISLILLIQSWLEPVQFLR 120

Qy

Qy 106 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 165  
 Db 121 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 180  
 Qy 166 ALLKNYGLYCPRKDMKDVKETFLRIVQCRSVEGSCGF 202  
 Db 181 ALLKNYGLYCPRKDMKDVKETFLRIVQCRSVEGSCGF 217

RESULT 4  
 US-08-784-582-10  
 ; Sequence 1.0, Application US/08784582  
 ; Patent No. 6110707  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Newgard, Christopher B.  
 ; APPLICANT: Halban, Philippe A.  
 ; APPLICANT: Clark, Samuel A.  
 ; APPLICANT: Clark, Karl D.  
 ; APPLICANT: Quaade, Christian  
 ; APPLICANT: Kruse, Fred  
 ; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM  
 ; TITLE OF INVENTION: SECRETORY CELL LINES  
 ; NUMBER OF SEQUENCES: 79  
 ; CORRESPONDENCE ADDRESS:  
 ; ADDRESSEE: Arnold, White & Durkee  
 ; STREET: P.O. Box 4433  
 ; CITY: Houston  
 ; STATE: Texas  
 ; COUNTRY: USA  
 ; ZIP: 77210

COMPUTER READABLE FORM:  
 MEDIUM: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: PatentIn Release #1.0, Version #1.30

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/784,582  
 FILING DATE: Concurrently Herewith  
 CLASSIFICATION: 435  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 60/028,427  
 FILING DATE: 15-OCT-1996  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/589,028  
 FILING DATE: 19-JAN-1996  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Highlander, Steven L.  
 REGISTRATION NUMBER: 37,642  
 REFERENCE/DOCKET NUMBER: US/08/589  
 TELEPHONE: 512/474-3000  
 TELEFAX: 512/474-7577  
 INFORMATION FOR SEQ ID NO: 10:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 217 amino acids  
 TYPE: amino acid  
 STRANDEDNESS:  
 TOPOLOGY: linear

US-08-784-582-10  
 Query Match 97.9%; Score 1024.5; DB 3; Length 217;  
 Best Local Similarity 92.6%; Pred. No. 5.1e-108; Pred. No. 5.1e-108;  
 Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1;

Qy 1 MATGSRSLIILAFGLLCPWLOGSAAPTIPLSRFDNISRRAHRLHQLAFTYQEF-- 57  
 Db 1 MATGSRSLIILAFGLLCPWLOGSAAPTIPLSRFDNISRRAHRLHQLAFTYQEEA 60  
 Qy 58 -----NPQTSCLCSEISIPTPSNREETQKSNLELRISLILISWLEPQFLR 105  
 Db 61 YIPKEQKYSFLQNQPQLCFCSEISIPTPSNREETQKSNLELRISLILISWLEPQFLR 120  
 Qy 106 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 165

Db 61 YIPKEQKYSFLQNQPQLCFCSEISIPTPSNREETQKSNLELRISLILISWLEPQFLR 120  
 Qy 106 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 165  
 Db 121 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 180  
 Qy 166 ALLKNYGLYCPRKDMKDVKETFLRIVQCRSVEGSCGF 202  
 Db 181 ALLKNYGLYCPRKDMKDVKETFLRIVQCRSVEGSCGF 217

RESULT 5  
 US-08-785-271-10  
 ; Sequence 10, Application US/08785271  
 ; Patent No. 6194176  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Newgard, Christopher B.  
 ; APPLICANT: Halban, Philippe A.  
 ; APPLICANT: No. 6194176mington, Karl D.  
 ; APPLICANT: Clark, Samuel A.  
 ; APPLICANT: Thippen, Anice E.  
 ; APPLICANT: Quaade, Christian  
 ; APPLICANT: Kruse, Fred  
 ; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM  
 ; TITLE OF INVENTION: SECRETORY CELL LINES  
 ; NUMBER OF SEQUENCES: 56  
 ; CORRESPONDENCE ADDRESS:  
 ; ADDRESSEE: Arnold, White & Durkee  
 ; STREET: P.O. Box 4433  
 ; CITY: Houston  
 ; STATE: Texas  
 ; COUNTRY: USA  
 ; ZIP: 77210

COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: PatentIn Release #1.0, Version #1.30

CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/785,271  
 FILING DATE: Concurrently Herewith  
 CLASSIFICATION: 435  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/589,028  
 FILING DATE: 19-JAN-1996  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Highlander, Steven L.  
 REGISTRATION NUMBER: 37,642  
 REFERENCE/DOCKET NUMBER: US/08/589  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 512/474-3000  
 TELEFAX: 512/474-7577  
 INFORMATION FOR SEQ ID NO: 10:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 217 amino acids  
 TYPE: amino acid  
 STRANDEDNESS:  
 TOPOLOGY: linear

US-08-785-271-10  
 Query Match 97.9%; Score 1024.5; DB 3; Length 217;  
 Best Local Similarity 92.6%; Pred. No. 5.1e-108; Pred. No. 5.1e-108;  
 Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1;

Qy 1 MATGSRSLIILAFGLLCPWLOGSAAPTIPLSRFDNISRRAHRLHQLAFTYQEF-- 57  
 Db 1 MATGSRSLIILAFGLLCPWLOGSAAPTIPLSRFDNISRRAHRLHQLAFTYQEEA 60  
 Qy 58 -----NPQTSCLCSEISIPTPSNREETQKSNLELRISLILISWLEPQFLR 105  
 Db 61 YIPKEQKYSFLQNQPQLCFCSEISIPTPSNREETQKSNLELRISLILISWLEPQFLR 120  
 Qy 106 SVFANSLYGASDSNVYDILKDLLEGQITLGMGRLEDGSRTGQIFKOTYSKFDTNSHND 165

RESULT 6

US-08-759-628-11

Sequence 11, Application US/08759628

GENERAL INFORMATION:

APPLICANT: Altmann, Scott W.

APPLICANT: Rock, Fernando L.

APPLICANT: Bazan, J. Fernando

APPLICANT: Kastellein, Robert A.

TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS

NUMBER OF SEQUENCES: 11

CORRESPONDENCE ADDRESS:

ADDRESSEE: DNA Research Institute

STREET: 901 California Avenue

CITY: Palo Alto

STATE: California

COUNTRY: USA

ZIP: 94304-1104

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOSS/MS-DOS

SOFTWARE: Patent In Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US08/759,628

FILING DATE: 05-DEC-1996

CLASSIFICATION: 435

PRIOR APPLICATION DATA:

APPLICATION NUMBER: US 60/008,574

FILING DATE: 06-DEC-1995

ATTORNEY/AGENT INFORMATION:

NAME: Ching, Edwin P.

REGISTRATION NUMBER: 34,090

REGISTRATION NUMBER: DX0552Q

TELECOMMUNICATION INFORMATION:

TELEPHONE: 415-852-9196

TELEFAX: 415-496-1200

INFORMATION FOR SEQ ID NO: 11:

SEQUENCE CHARACTERISTICS:

LENGTH: 217 amino acids

TYPE: amino acid

STRANDEDNESS: single

TOPOLOGY: linear

MOLECULE TYPE: protein

FEATURE:

NAME/KEY: Peptide

LOCATION: 32..53

FEATURE:

NAME/KEY: Peptide

LOCATION: 94..115

FEATURE:

NAME/KEY: Peptide

LOCATION: 133..153

FEATURE:

NAME/KEY: Peptide

LOCATION: 192..210

OTHER INFORMATION: /note= "The peptides above are depicted in Figure 1"

US-08-759-628-11

Query Match 97.9% Score 1024.5; DB 3; Length 217; Best Local Similarity 92.6%; Prd. No. 5;le-108; Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1; OTHER INFORMATION: depicted in Figure 1"

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSLRDNAMLRHLQAFDTYQEEEA 60

Db 58 -----NPOTSLCSES1PTPSNREETQKSNLLELLRSLLLIQSWLEPVQFLR 105

Qy 61 YIPEQKYSFLQNPQTSLCSES1PTPSNREETQKSNLLELLRSLLLIQSWLEPVQFLR 120

Db 106 SVFANSLVGASDNYVYDLLKDLLEGQTMGRLEDSPRTQIFKOTYSKFDTNSHND 165

Qy 121 SVFANSLVGASDNYVYDLLKDLLEGQTMGRLEDSPRTQIFKOTYSKFDTNSHND 180

Db 166 ALLKNYGLYCPRKMDKVTPLRIVQCRSVEGSGCF 202

Db 181 ALLKNYGLYCPRKMDKVTPLRIVQCRSVEGSGCF 217

RESULT 7

US-09-284-878-1

Sequence 1, Application US/09284878

GENERAL INFORMATION:

APPLICANT: Olazaran, Martha Guerrero

APPLICANT: Salданa, Hugo Barrena

APPLICANT: Salvador, Jose Maria Viader

TITLE OF INVENTION: Genetically Modified Methyiotrophic P. pastoris Yeast for the Production and Secretion of the Human Growth Hormone

FILE REFERENCE: 1829\_0010000

CURRENT APPLICATION NUMBER: US/09/284,878

CURRENT FILING DATE: 1999-07-21

PRIOR APPLICATION NUMBER: PCT/MX97/00033

PRIOR FILING DATE: 1997-10-24

NUMBER OF SEQ ID NOS: 9

SOFTWARE: PatentIn Ver. 2.1

SEQ ID NO 1

LENGTH: 217

TYPE: PRT

ORGANISM: Homo sapiens

US-09-284-878-1

Query Match 97.9% Score 1024.5; DB 4; Length 217; Best Local Similarity 92.6%; Prd. No. 5;le-108; Matches 201; Conservative 0; Mismatches 1; Indels 15; Gaps 1;

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSLRDNAMLRHLQAFDTYQEEA 57

Db 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSLRDNAMLRHLQAFDTYQEEA 60

Qy 58 -----NPOTSLCSES1PTPSNREETQKSNLLELLRSLLLIQSWLEPVQFLR 105

Db 61 YIPEQKYSFLQNPQTSLCSES1PTPSNREETQKSNLLELLRSLLLIQSWLEPVQFLR 120

Db 106 SVFANSLVGASDNYVYDLLKDLLEGQTMGRLEDSPRTQIFKOTYSKFDTNSHND 165

Db 121 SVFANSLVGASDNYVYDLLKDLLEGQTMGRLEDSPRTQIFKOTYSKFDTNSHND 180

Db 166 ALLKNYGLYCPRKMDKVTPLRIVQCRSVEGSGCF 202

Db 181 ALLKNYGLYCPRKMDKVTPLRIVQCRSVEGSGCF 217

RESULT 8

US-09-511-024A-1

Sequence 1, Application US/09511024A

GENERAL INFORMATION:

APPLICANT: Elikov, Anton

APPLICANT: Dahiya, Bassil I.

TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND PROTEINS WITH GROWTH HORMONE ACTIVITY

FILE REFERENCE: A-67477-1/RT/RMS/RMK

PATENT NO. 664554

CURRENT APPLICATION NUMBER: US/09/511,024A

CURRENT FILING DATE: 2002-05-06

PRIOR APPLICATION NUMBER: US 60/133,784

PRIOR FILING DATE: 1999-05-12

Qy 1 MATGSRSTLIAFGLLCLPWLQEGSAFPTIPLSLRDNAMLRHLQAFDTYQEEA 57

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SEQUENCE CHARACTERISTICS:
  LENGTH: 217 AMINO ACIDS
  TYPE: AMINO ACID
  STRANDEDNESS:
  TOPOLOGY: LINEAR
  MOLECULE TYPE: PROTEIN
US-08-187-756C-4

Query Match 97.1%; Score 1016.5; DB 1;
Best Local Similarity 92.3%; Pred. No. 4.1e-107;
Matches 200; Conservative 0; Mismatches 2; Indels 15; Gaps 1;
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  QY 61 YIPKEQKYSFLQNPQTSLCFSESIPTPSNREETQKSNLELLRISLLIQSWLBPVQFLR 120
  QY 62 SVFANSLVGASDSDNYDILKDLDEEGTQFLMGRLEDGSPTQIFKQTYSKFDTNHND 165
  Db 63 SVFANSLVGASDSDNYDILKDLDEEGTQFLMGRLEDGSPTQIFKQTYSKFDTNHND 180
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RESULT 10
US-08-710-324A-4
  Sequence 4, Application US/08710324A
  Patent No. 596411
  GENERAL INFORMATION:
  APPLICANT: Rosen, et al.
  TITLE OF INVENTION: Human Growth Factor
  NUMBER OF SEQUENCES: 7
  CORRESPONDENCE ADDRESS:
  ADDRESS: Human Genome Sciences, Inc.
  STREET: 9410 Key West Avenue
  CITY: Rockville
  STATE: MD
  COUNTRY: USA
  ZIP: 20850
  COMPUTER READABLE FORM:
  MEDIUM TYPE: Floppy disk
  COMPUTER: IBM PC compatible
  OPERATING SYSTEM: PC-DOSS-MS-DOS
  SOFTWARE: PatentIn Release #1.0, Version #1.30
  CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/08/710,324A
  FILING DATE: 16-SEP-1996
  CLASSIFICATION: 435
  PRIOR APPLICATION DATA:
  APPLICATION NUMBER: US/08/710,324A
  FILING DATE: 07-06-88
  COMPUTER READABLE FORM:
  MEDIUM TYPE: 3.5 INCH DISKETTE
  COMPUTER: IBM PS/2
  OPERATING SYSTEM: MS-DOS
  SOFTWARE: WORD PERFECT 5.1
  CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/08/187,756C
  FILING DATE: January 27, 1994
  CLASSIFICATION: 435
  PRIOR APPLICATION DATA:
  APPLICATION NUMBER:
  FILING DATE:
  ATTORNEY/AGENT INFORMATION:
  NAME: FERRARO, GREGORY D.
  REGISTRATION NUMBER: 36,134
  REFERENCE/DOCKET NUMBER: 325800-55
  TELECOMMUNICATION INFORMATION:
  TELEPHONE: 201-994-1700
  TELEFAX: 201-994-1700
  INFORMATION FOR SEQ ID NO: 4:
  SEQUENCE CHARACTERISTICS:
  LENGTH: 217 AMINO ACIDS
  TYPE: AMINO ACID
  STRANDEDNESS:
  TOPOLOGY: LINEAR
  MOLECULE TYPE: PROTEIN
US-08-710-324A-4

Query Match 97.1%; Score 1016.5; DB 2; Length 217;
  Sequence 4, Application US/08710324A
  Patent No. 596411
  GENERAL INFORMATION:
  APPLICANT: Rosen, et al.
  TITLE OF INVENTION: Human Growth Factor
  NUMBER OF SEQUENCES: 7
  CORRESPONDENCE ADDRESS:
  ADDRESS: Human Genome Sciences, Inc.
  STREET: 9410 Key West Avenue
  CITY: Rockville
  STATE: MD
  COUNTRY: USA
  ZIP: 20850
  COMPUTER READABLE FORM:
  MEDIUM TYPE: Floppy disk
  COMPUTER: IBM PC compatible
  OPERATING SYSTEM: PC-DOSS-MS-DOS
  SOFTWARE: PatentIn Release #1.0, Version #1.30
  CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/08/710,324A
  FILING DATE: 16-SEP-1996
  CLASSIFICATION: 435
  PRIOR APPLICATION DATA:
  APPLICATION NUMBER: US/08/710,324A
  FILING DATE: 07-06-88
  COMPUTER READABLE FORM:
  MEDIUM TYPE: 3.5 INCH DISKETTE
  COMPUTER: IBM PS/2
  OPERATING SYSTEM: MS-DOS
  SOFTWARE: WORD PERFECT 5.1
  CURRENT APPLICATION DATA:
  APPLICATION NUMBER: US/08/187,756C
  FILING DATE: January 27, 1994
  CLASSIFICATION: 435
  PRIOR APPLICATION DATA:
  APPLICATION NUMBER:
  FILING DATE:
  ATTORNEY/AGENT INFORMATION:
  NAME: FERRARO, GREGORY D.
  REGISTRATION NUMBER: 36,134
  REFERENCE/DOCKET NUMBER: 325800-55
  TELECOMMUNICATION INFORMATION:
  TELEPHONE: 201-994-1700
  TELEFAX: 201-994-1700
  INFORMATION FOR SEQ ID NO: 4:
  SEQUENCE CHARACTERISTICS:
  LENGTH: 217 AMINO ACIDS
  TYPE: AMINO ACID
  STRANDEDNESS:
  TOPOLOGY: LINEAR
  MOLECULE TYPE: PROTEIN
US-08-710-324A-4

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Best Local Similarity 92.2%; Pred. No. 4.1e-107; Matches 200; Conservative 0; Mismatches 2; Indels 15; Gaps 1;

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Db 61 YIPKEQKYSFLQNPOTSLCFSESIPTPSNREETQOKSNLELLRISULLIOSWLEPVQFLR 120

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Db 121 SVEFANSLVYASDSNVYDYLKDLEGGTQMLGRGICLPTGQIFKOTYSKFDTNHND 180

RESULT 11

US-09-411-657-4

Sequence 4, Application US/09411657

Patent No. 6566328

GENERAL INFORMATION:

APPLICANT: Rosen, et al.

TITLE OF INVENTION: Human Growth Factor

NUMBER OF SEQUENCES: 7

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patent In Release #1.0, Version #1.30

PRIORITY NUMBER: US/09/411,657

FILING DATE:

CLASSIFICATION:

PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/710,324

FILING DATE: January 27, 1994

ATTORNEY/AGENT INFORMATION:

NAME: PERARO, GREGORY D.

REGISTRATION NUMBER: 36,134

REFERENCE/DOCKET NUMBER: 325800-55

TELECOMMUNICATION INFORMATION:

TELEPHONE: 201-934-1700

TELEFAX: 201-934-1744

INFORMATION FOR SEQ ID NO: 5:

SEQUENCE CHARACTERISTICS:

LENGTH: 198 AMINO ACIDS

TYPE: AMINO ACID

STRANDEDNESS:

TOPOLogy: LINEAR

MOLECULE TYPE: PROTEIN

US-08-187-756C-5

Query Match 95.4%; Score 999; DB 1; Length 198;

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Qy 121 YDLLKDLEGGTQMLGRGICLPTGQIFKOTYSKFDTNHNDLKNYGLYCPKD 180

Db 117 YDLLKDLEGGTQMLGRGICLPTGQIFKOTYSKFDTNHNDLKNYGLYCPKD 176

Qy 181 MDKVTPLRVQCSVEGSGF 202

Qy 58 -----NPOTSLCFSESIPTPSNREETQOKSNLELLRISULLIOSWLEPVQFLR 105

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Db 177 MDKVETFLIRIVQCRSVEGSGCF 198
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Db US-08-710-324A-5
Db Sequence 5, Application US/08710324A
Db Patent No. 5962411
Db GENERAL INFORMATION:
Db APPLICANT: Rosen, et al.
Db TITLE OF INVENTION: Human Growth Fa-
Db NUMBER OF SEQUENCES: 7
Db CORRESPONDENCE ADDRESS:
Db ADDRESSEE: Human Genome Sciences,
Db STREET: 9410 Key West Avenue
Db CITY: Rockville
Db STATE: MD
Db COUNTRY: USA
Db ZIP: 20850
Db COMPUTER READABLE FORM:
Db MEDIUM TYPE: Floppy disk
Db COMPUTER: IBM PC compatible
Db OPERATING SYSTEM: PC-DOS/MS-DOS
Db SOFTWARE: PatentIn Release #1.0, 1
Db CURRENT APPLICATION DATA:
Db APPLICATION NUMBER: US/08/710,324
Db FILING DATE: 16-SEP-1996
Db CLASSIFICATION: 435
Db PRIOR APPLICATION DATA:
Db APPLICATION NUMBER: US 08/187,756
Db FILING DATE: 27-JUN-1994
Db ATTORNEY/AGENT INFORMATION:
Db NAME: Brookes, A. Anders
Db REGISTRATION NUMBER: 36,373
Db REFERENCE/DOCKET NUMBER: PF104D1.1
Db TELECOMMUNICATION INFORMATION:
Db TELEPHONE: 301-309-8504
Db TELEFAX: 301-309-8439
Db INFORMATION FOR SEQ ID NO: 5:
Db SEQUENCE CHARACTERISTICS:
Db LENGTH: 198 AMINO ACID
Db TYPE: AMINO ACID
Db STRANDEDNESS:
Db TOPOLOGY: LINEAR
Db MOLECULE TYPE: PROTEIN
Db US-08-710-324A-5

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Query 7 58 -SLCFSESSIPPTSNREETQKSNLELL
Query 8 117 VYDLKDLDEEGIOTLMGRLEDGSPTRGCG
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Query 10 181 MDKVETFLIRIVQCRSVEGSGCF 202
Query 11 177 MDKVETFLIRIVQCRSVEGSGCF 198

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NUMBER OF SEQUENCES: 79  
 CORRESPONDENCE ADDRESS:  
 ADDRESSEE: Arnold, White & Durkee  
 STREET: P.O. Box 4433  
 CITY: Houston  
 STATE: Texas  
 COUNTRY: USA  
 ZIP: 77210  
 COMPUTER READABLE FORM:  
 MEDIUM TYPE: Floppy disk  
 COMPUTER: IBM PC compatible  
 OPERATING SYSTEM: PC-DOS/MS-DOS  
 SOFTWARE: PatentIn Release #1.0, Version #1.30  
 CURRENT APPLICATION DATA:  
 APPLICATION NUMBER: US/08/784,592  
 FILING DATE: Concurrently Herewith  
 CLASSIFICATION: 435  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 60/028,427  
 FILING DATE: 15-OCT-1996  
 PRIOR APPLICATION DATA:  
 APPLICATION NUMBER: US 08/589,028  
 FILING DATE: 19-JAN-1996  
 ATTORNEY/AGENT INFORMATION:  
 NAME: Highlander, Steven L.  
 REGISTRATION NUMBER: 37,642  
 REFERENCE/DOCKET NUMBER: UTSD:514  
 TELECOMMUNICATION INFORMATION:  
 TELEPHONE: 512/418-3000  
 TELEFAX: 512/474-7577  
 INFORMATION FOR SEQ ID NO: 73:  
 SEQUENCE CHARACTERISTICS:  
 LENGTH: 360 amino acids  
 TYPE: amino acid  
 STRANDEDNESS:  
 TOPOLOGY: linear  
 US-08-784-582-73

Query Match 88 5%; Score 926.5; DB 3; Length 360;  
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 Db 181 ALIKNYGGLYCERKDMKVKETPLRIVQCRS 210

Search completed: July 12, 2004, 13:06:30  
 Job time : 23 secs



[7] SEQUENCE FROM N.A. (ISOFORM 4).  
RN RP  
RC TISSUE=pituitary; PubMed=10931946;  
RX MEDLINE=20402571;  
RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-H., Huang Q.-H., Ren S.-X.,  
RA Huang C.-L., Li Y.-B., Jiang Q.-H.,  
RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.-J.,  
RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,  
RA "Gene expression profiling in the human hypothalamus-pituitary-adrenal  
axis and full-length cDNA cloning";  
RT Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548 (2000).  
RN [8]  
RN SEQUENCE OF 1-26 FROM N.A.  
RX MEDLINE=66137393; PubMed=3912261;  
RA Gray G.L., Baldridge J.S., McKeown K.S., Heyneker H.L., Chang C.N.;  
RT "Periplasmic production of correctly processed human growth hormone in  
RT Escherichia coli"; natural and bacterial signal sequences are  
RT interchangeable.";  
RN Gene 39:247-254 (1985).  
RN [9]  
RN SEQUENCE OF 27-217.  
RX MEDLINE=692839202; PubMed=5810834;  
RA Li C.H., Dixon J.S., Liu W.-K.;  
RT "Human pituitary growth hormone. XIX. The primary structure of the  
hormone";  
RT Arch. Biochem. Biophys. 133:70-91 (1969).  
RN SEQUENCE OF 27-217, AND REVISIONS.  
RX MEDLINE=72143935; PubMed=5144027;  
RA Li C.H., Dixon J.S.;  
RT "Human pituitary growth hormone. 32. The primary structure of the  
hormone; revision";  
RT Arch. Biochem. Biophys. 146:233-236 (1971).  
RN REVISION.  
RX MEDLINE=73092028; PubMed=4675454;  
RA Bewley T.A., Dixon J.S., Li C.H.;  
RT "Sequence comparison of human pituitary growth hormone, human  
chorionic somatomammotropin, and ovine pituitary growth and  
RT lactogenic hormones";  
RT Int. J. Pept. Protein Res. 4:281-287 (1972).  
RN SEQUENCE OF 27-61.  
RX MEDLINE=71139765; PubMed=5270246;  
RA Niall H.D.;  
RT "Revised primary structure for human growth hormone.";  
RT Nature New Biol. 230:90-91 (1971).  
RN [13]  
RN SEQUENCE OF 119-120 AND 157-159.  
RX MEDLINE=71153968; PubMed=5279528;  
RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;  
RT "Sequences of pituitary and placental lactogenic and growth hormones:  
RT evolution from a primordial peptide by gene reduplication.";  
RT Proc. Natl. Acad. Sci. U.S.A. 68:866-869 (1971).  
RN REVISION.  
RA Niall H.D.;  
RT "(In) Chemistry of the human lactogenic hormones.";  
RT Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,  
RN pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).  
RN SEQUENCE OF 27-79 (ISOFORM 2).  
RX MEDLINE=81117361; PubMed=7462247;  
RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,  
RA Turner C., Cary P.D., Crane-Robinson C.;  
RT "The 20,000 molecular weight variant of human growth hormone.  
RT Preparation and some physical and chemical properties.";  
RT J. Biol. Chem. 256:2395-2401 (1981).  
RN [16]  
RN SEQUENCE OF 46-80 (ISOFORM 2).  
RX MEDLINE=80130196; PubMed=7356479;

RA Lewis U.J., Bonewald L.F., Lewis L.J.;  
RT "The 20,000-dalton variant of human growth hormone: location of the  
amino acid deletions";  
RL Biochem. Biophys. Res. Commun. 92:511-516 (1980).  
RN [17]  
RN DEMIDATION OF GLN-163 AND ASN-178.  
RX MEDLINE=8205597; PubMed=7028740;  
RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;  
RA "Altered proteolytic cleavage of human growth hormone as a result of  
RT demidation";  
RT J. Biol. Chem. 256:11645-11650 (1981).  
RN [18]  
RN REVIEW.  
RX MEDLINE=99321812; PubMed=10393484;  
RA Baumann G.;  
RA "Growth hormone heterogeneity in human pituitary and plasma.";  
RT Horm. Res. 51 Suppl. 1:2-6 (1999).  
RN [19]  
RN 3D-STRUCTURE MODELING.  
RX MEDLINE=88190073; PubMed=3447173;  
RA Cohen F.E., Runtz T.D.;  
RA "Prediction of the three-dimensional structure of human growth  
hormone.";  
RL Proteins 2:162-166 (1987).  
RN [20]  
RN X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).  
RX MEDLINE=121196577; PubMed=1549776;  
RA de Vos A.M., Uitsch M., Kossiakoff A.A.;  
RT "Human growth hormone and extracellular domain of its receptor:  
RT crystal structure of the complex";  
RL Science 255:306-312 (1992).  
RN [21]  
RN X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).  
RX MEDLINE=95075462; PubMed=7984244;  
RA Somers W., Uitsch M., de Vos A.M., Kossiakoff A.A.;  
RT "The X-ray structure of a growth hormone-prolactin receptor complex.";  
RL Nature 372:478-481 (1994).  
RN [22]  
RN X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).  
RX MEDLINE=97113023; PubMed=8943276;  
RA Chantalt L., Chirgadze N.Y., Jones N., Koerber F., Navaza J.,  
RA Pavlovsk A.G., Wlodawer A.;  
RT "The crystal-structure of wild-type growth-hormone at 2.5-A  
resolution.";  
RT Protein Pept. Lett. 2:333-340 (1995).  
RN [23]  
RN X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).  
RX MEDLINE=96150232; PubMed=8552145;  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RT "Short stature caused by mutant growth hormone.";  
RT New Engl. J. Med. 334:432-436 (1996).  
RN [24]  
RN VARIANT KOWARSKI SYNDROME CYS-103.  
RX MEDLINE=96150232; PubMed=8552145;  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RT "Crystal structure of an antagonist mutant of human growth hormone,  
RT G120R, in complex with its receptor at 2.9-A resolution.";  
RT J. Biol. Chem. 271:32197-32203 (1996).  
RN [25]  
RN VARIANT KOWARSKI SYNDROME GLY-138.  
RX MEDLINE=97426478; PubMed=9276733;  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RA New Engl. J. Med. 334:1207-1207 (1996).  
RN [26]  
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RX MEDLINE=96150232; PubMed=8552145;  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RT "Biologically inactive growth hormone caused by an amino acid  
RT substitution.";  
RT J. Clin. Invest. 100:1159-1165 (1997).  
RN [27]  
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RX MEDLINE=99318093; PubMed=10391209;

Query Match	Score 1024.5;	DB 1;	Length 217;	
Best Local Similarity	97.9%;	Pred. No. 4.2e-86;		
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Db	1	MATGSRSTSLLAFLGLCUPWLOEWSAAPTIPSLRFLDNASLAHRHLQAFDTYQEF ---	57	
Qy	1	MATGSRSTSLLAFLGLCUPWLOEWSAAPTIPSLRFLDNASLAHRHLQAFDTYQEF ---	57	
Db	1	MATGSRSTSLLAFLGLCUPWLOEWSAAPTIPSLRFLDNASLAHRHLQAFDTYQEF ---	57	
Qy	58	-----NPQTSCLCFSESS1PTPSNREETQOKSNLELLRLRISLILQSMLEPVQFLR	105	
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Qy	61	YIPKEQKYSFLQNQTSCLCFSESS1PTPSNREETQOKSNLELLRLRISLILQSMLEPVQFLR	120	
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Db	121	SVFANSLVYGAQDSNYDQKLDLREGIQTLMGRLEDGSPTQIKFQTYSKFDTNSHNDD	180	
Qy	166	ALLKNYGLLYCFRKDMKVETFLRIVQCRSVEGSGCF	202	
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RESULT	2	SOMA_PANTR	STANDARD;	PRT;	217 AA.
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AC	28-PFB-2003	(Rel. 41, Created)			
DT	28-FEB-2003	(Rel. 41, Last sequence update)			
DT	28-FEB-2003	(Rel. 41, Last annotation update)			
DB	Somatotropin precursor (Growth hormone) (GH)	(Growth hormone 1).			
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GN	Macaca mulatta (Rhesus macaque).				
OS	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;				
OC	Cercopithecinae; Macaca.				
NCBI_TaxID	9544				
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RP	SEQUENCE FROM N.A.				
RP	Revول. A., Escuñel D., Santiago D., Barrera-Saldana H.;				
RT	"Independent duplication of the growth hormone gene in three				
RT	Anthropoidea lineages.";				
RT	Submitted (APR-2001) to the EMBL/GenBank/DDJB databases.				
CC	-!- FUNCTION: Plays an important role in growth control. Its major				
CC	role in stimulating body growth is to stimulate the liver and				
CC	other tissues to secrete IGF-1. It stimulates both the liver and				
CC	differentiation and proliferation of myoblasts. It also stimulates				
CC	amino acid uptake and protein synthesis in muscle and other				
CC	tissues. (By similarity).				
CC	-!- SUBCELLULAR LOCATION: Belongs to the somatotropin/prolactin family.				
CC	This SWISS-PROT entry is copyright. It is produced through a collaboration				
CC	between the Swiss Institute of Bioinformatics and the EMBL outstation -				
CC	the European Bioinformatics Institute. There are no restrictions on its				
CC	use by non-profit institutions as long as its content is in no way				
CC	modified and this statement is not removed. Usage by and for commercial				
CC	entities requires a license agreement (See <a href="http://www.isb-sib.ch/announce/">http://www.isb-sib.ch/announce/</a> or send an email to license@isb-sib.ch).				
CC	EMBL: AF574232; AA172284; -				
DR	InterPro; IPR001400; Somatotropin.				
DR	Pfam; PF0103; hormone; 1.				
DR	PRINTS: PRO00836; SOMATOTROPIN				
DR	PROSITE; PS00366; SOMATOTROPIN_1; 1.				
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.				
KW	Hormone; Pituitary; Signal.				
FT	SIGNAL	1	26	BY SIMILARITY.	
FT	CHAIN	27	217	SOMATOTROPIN.	
FT	DISULFID	79	191	BY SIMILARITY.	
FT	DISULFID	208	215	BY SIMILARITY.	
SQ	SEQUENCE	217 AA;	24843 MW;	FEA295EDE0518674 CRC64;	
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RL J. Biol. Chem. 258:3787-3793 (1983).  
 RN [4] SEQUENCE FROM N.A. (GENBES CSH1 AND CSH2).  
 RP MEDLINE=89307277; PubMed=2744760;  
 RX Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,  
 Seeburg P.H.;  
 RA "The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.";  
 RT DNA 1:239-249 (1982).  
 RL [6]  
 RN [6]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE-Placenta, and Uterus;  
 RX MEDLINE=2238257; PubMed=12477932;  
 RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
 RA Klausner R.D., Collins F.S., Wagner L., Shemesh C.M., Schulter G.D.,  
 RA Altschul S.F., Zeerberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
 RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
 RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
 RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
 RA Brownstein M.J., Usdin T.B., Toshinai K., Carrinchi P., Prange C.,  
 RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahay S.J.,  
 RA Bosak S.A., McEvany P.J., McKernan K.J., Malek J.A., Gunnarsson P.H.,  
 RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
 RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
 RA Fahey J., Helton E., Kettman M., Madan A., Rodriguez S., Sanchez A.,  
 RA Whiting M., Madan A., Young A.C., Shevchenko Y., Buffard G.G.,  
 RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
 RA Rodriguez A.C., Grinwood J., Schmutz J., Myers R.M.,  
 RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
 RA Schein J.E., Jones S.J.M., Marra M.A.,  
 • RT "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences";  
 RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).  
 RN [7]  
 RP SEQUENCE OF 50-217 FROM N.A.  
 RX MEDLINE=78071761; PubMed=593366;  
 RA Shine J., Seeburg P.H., Martioli J.A., Baxter J.D., Goodman H.M.;  
 RT "Construction and analysis of recombinant DNA for human chorionic somatomammotropin.";  
 RT Nature 270:494-499 (1977).  
 RN [8]  
 RP SEQUENCE OF 27-217.  
 RX MEDLINE=73201971; PubMed=4712450;  
 RA Li C.H., Dixon J.S., Chung D.;  
 RT "Amino acid sequence of human chorionic somatomammotropin.";  
 RN [9]  
 RP SEQUENCE OF 27-217.  
 RX MEDLINE=7016313; PubMed=5286363;  
 RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;  
 RT "Amino-acid sequence of human placental lactogen.";  
 RL Nature New Biol. 233:59-61(1971).  
 RN [10]  
 RP ERRATUM.  
 RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;  
 RL Nature New Biol. 235:64-64(1972).  
 RN [11]  
 RP INTERCHAIN DISULFIDE BONDS.  
 RX MEDLINE=79173081; PubMed=338159;  
 RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;  
 RT "Identification of the interchain disulfide bonds of dimeric human placental lactogen.";  
 RL J. Biol. Chem. 254:3782-3787 (1979).  
 CC -|- FUNCTION: Similar to that of somatotropin.  
 CC -|- SUBCELLULAR LOCATION: Secreted.  
 CC -|- MISCELLANEOUS: The sequence of CSH1 is shown.

-|- SIMILARITY: Belongs to the somatotropin/prolactin family.  
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 CC DR EMBL; V00573; CAA23826.1;  
 CC DR EMBL; J00289; AAA98747.1;  
 CC DR EMBL; K02401; AAA52115.1;  
 CC DR EMBL; M15894; AAA52116.1;  
 CC DR EMBL; J03071; AA52551.1;  
 CC DR EMBL; J00118; AA98621.1;  
 CC DR EMBL; BC002217; AAH02717.1;  
 CC DR EMBL; BC005221; AAH05221.1;  
 CC DR EMBL; BC020756; AAH20756.1;  
 CC DR PIR; A26449; A26449.  
 DR PIR; C32435; LCHRUC.  
 DR HSSP; P01241; I2422.  
 DR Genew; HGNC-2440; CSH1.  
 DR Genew; HGNC-2441; CSH2.  
 DR MIM; 150200;  
 DR GO; GO-0007565; P:pregnancy; TAS.  
 DR Interpro; IPR01400; Somatotropin.  
 DR Pfam; PF00103; hormone\_1.  
 DR PRINTS; PRO0836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 DR Hormone; Placenta; Multigene family; Signal.  
 FT SIGNAL 1 26 LACTOGEN.  
 FT CHAIN 27 217  
 FT DISULFID 79 191  
 FT DISULFID 208 215  
 FT DISULFID 208 208  
 FT DISULFID 215 215  
 FT VARIANT 3 3  
 FT VARIANT 104 105  
 FT DISULFID 208 208  
 FT CONFFLICT 84 84  
 FT CONFFLICT 95 95  
 FT CONFFLICT 116 116  
 FT CONFFLICT 134 136  
 SQ SEQUENCE 217 AA; 25020 MW; 23580DC7A713F431 CRC64;  
 Query Match 83.3%; Score 872.5; DB 1; Length 217;  
 Best Local Similarity 79.3%; Pred. No. 2 9e-72;  
 Matches 172; Conservative 11; Mismatches 19; Indels 15; Gaps 1;  
 Qy 1 MATGSRSTLILIAFGILCLPWLQEGSAPFTIPLSLRLFDNALSIRAHRLHQLAFDTYQF---  
 Db 1 MAPGSRSTLILIAFGILCLPWLQEGSAPFTIPLSLRLFDNALSIRAHRLHQLAFDTYQF---  
 Qy 58 -----NPQTSLCSSESBISIPSNRERETQSNLILLRISILLQSLWPLPQFLR 105  
 Db 61 YIPKQDQYSFLHDSQTSFLAFALLCLPWLQEGAVQTPLSRJUDHAMQAHRAHQLAIDTYQFEEET 60  
 Qy 106 SVFANSLVYGAQDSANVYDILKDLBGTQTLGRLEDSPRTGQIFRQTSKFDTNSHND 165  
 Db 121 SMEFANLVYDTSQSDSYHLLKDLBGTQTLGRLEDSPRTGQIFRQTSKFDTNSHND 180  
 Qy 166 ALLKNGYGLYCFRKMDKMDVETFLRIVQCRSYEGSGCF 202  
 Db 181 ALLKNGYGLYCFRKMDKMDVETFLRIVQCRSYEGSGCF 217  
 RESULT 9  
 SOM2 MACMU  
 ID SOM2 MACMU  
 AC Q07370; Q28494;

DT	01-NOV-1997 (Rel. 35, Created)	Db	121 SVFANHLVHTNSNFDIYLKLGKQFLMERRLEDGSPTGQFKETYSKYDDNSHND 180
DT	01-NOV-1997 (Rel. 35, Last sequence update)	Qy	166 ALLKNYGLYCFRDMDXVETLIVQCRSVEGSGF 202
DE	28-FEB-2003 (Rel. 41, Last annotation update)	Db	181 TLKKNYRLYLFCFRDMNKVETFLTRCRAVEGGCGF 217
DE	Growth hormone variant precursor (GH-V) (Placenta-specific growth hormone) (Growth hormone 2).		
GN	Macaca mulatta (Rhesus macaque).		
OS	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea; Cercopithecinae; Macaca.		
OC			
NCBI_TAXID	9544;		
OX			
RN	[1]		
RP	SEQUENCE FROM N.A.		
RA	Golos T.G.;		
RA	Submitted (JAN-1994) to the EMBL/CenBank/DBDBI databases.		
RN	[2]		
RP	SEQUENCE FROM N.A.		
RC	TISSUE=Placenta;		
RC	MEDLINE=9408724; PubMed=8404617;		
RA	Golos T.G., Durnin M., Fisher J.M., Fowler P.D.;		
RT	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.";		
RT	Endocrinology 133:1744-1752 (1993).		
CC	-!- FUNCTION: Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues.		
CC	-!- SUBCELLULAR LOCATION: Secreted (By similarity).		
CC	-!- TISSUE SPECIFICITY: Expressed in the placenta.		
CC	-!- SIMILARITY: Belongs to the somatotropin/prolactin family.		
CC	-----		
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CC	-----		
DR	EMBL; U02993; AAA03391.1; -.		
DR	EMBL; L16545; AAA20480.1; -.		
DR	PIR; I67411; I67411.		
DR	InterPro; IPR01400; Somatotropin.		
DR	Pfam; PF00103; hormone_1.		
DR	PRINTS; PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1;		
DR	PROSITE; PS00338; SOMATOTROPIN_2;		
DR	Hormone; Placenta; Signal; Glycoprotein.		
FT	SIGNAL 1 26 BY SIMILARITY.		
FT	CHAIN 27 217 GROWTH HORMONE VARIANT.		
FT	DISULFID 79 191 BY SIMILARITY.		
FT	DISULFID 208 215 BY SIMILARITY.		
FT	CONFLICT 57 57 L -> F (IN REF. 2).		
FT	CONFLICT 152 152 E -> G (IN REF. 2).		
SQ	SEQUENCE 217 AA; 25221 MW; 8DB116C24BA390 CRC64;		
Query Match	79.2% Score 829.5; DB 1; Length 217;		
Best Local Similarity	75.6% pred. No. 2.3e-68;		
Matches	164; Conservative 14; Mismatches 24; Indels 15; Gaps 1;		
Qy	1 MATGSRSTILLAFGLLCLPWLQEGSAPTTPLSRSLDNASLRAHRLHQLADPTYQEF--- 57		
Db	1 MAAGSWTCLLALCLLCLPWLQEGSAPTTPLSWLNATAVRHHHLKADDTYPLKEEA 60		
Qy	58 ----- NPQTSCLCFSEISIPSNREETQKSNLLELRLISLILQSWLEPFQFLR 105		
Db	61 YIPKEQKYSFLRNPOISLCFSEISIPSNKEETQKSNLLELRLISLILQSWLEPFQFLR 120		
Qy	106 SVFANSILVAGSDSNVYDNLKQLEEGITQMRLEDSPTGQFQKRTYSKEDTNSHND 165		

CC	tissues.	RN [1]
CC	-:- SUBCELLULAR LOCATION: Secreted.	RP SEQUENCE FROM N.A.
CC	-:- SIMILARITY: Belongs to the somatotropin/prolactin family.	RP TISSUE-Pituitary;
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CC	DR EMBL; X53335; CAA37411.1; -.	RA Ascasio-Martinez J.A.; Barrera-Saldana H.A.;
CC	DR EMBL; M17704; AAA31043.1; -.	RT "Sequence of a cDNA encoding horse growth hormone.";
CC	DR EMBL; U19798; AAA31347.1; ALT_INIT.	RL Gene 143:299-300(1994).
CC	DR EMBL; M27326; AAA31045.1; -.	RN [2]
CC	DR EMBL; S72386; AAB29947.2; -.	RP SEQUENCE OF 27-216.
CC	DR EMBL; U73464; AAB17619.1; -.	RA Zakin M.M., Postkus E., Langton A.C., Ferrara P., Santome J.A.,
CC	DR PIR; JW0105; STPE.	RA DR Dellachia J.M., Paladini A.C.;
CC	DR Hormone; Pituitary; Signal.	RT "Primary structure of equine growth hormone.";
CC	DR InterPro; IPR001400; Somatotropin.	RL Int. J. Pept. Protein Res. 8:45-44(1976).
CC	DR Pfam; PF00103; hormone; 1.	RA RN [3]
CC	DR PRINTS; PR00836; SOMATOTROPIN.	RP PRELIMINARY SEQUENCE OF 27-216.
CC	DR PROSITE; PS00266; SOMATOTROPIN_1; 1.	RA RX MEDLINE=74020362; PubMed=4747819;
CC	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.	RA RT "The amino acid sequence of equine growth hormone.";
CC	CC KW Hormone; Pituitary; Signal.	RL FEBS Lett. 34:353-355(1973).
CC	FT SIGNAL; 1 26	RN [4]
CC	FT CHAIN 27 216 SOMATOTROPIN.	RP SEQUENCE OF 68-95 AND 183-216.
CC	FT DISULFID 78 189 BY SIMILARITY.	RA RX MEDLINE=68368390; PubMed=4876100;
CC	FT DISULFID 206 214 BY SIMILARITY.	RA RT "Amino acid sequences around the cystine residues in horse growth hormone.";
CC	FT CONFLICT 9 9 A -> V (IN REF. 5).	RT RT "Amino acid sequences around the cystine residues in horse growth hormone.";
CC	FT CONFLICT 22 22 R -> Q (IN REF. 5).	RT RT "Amino acid sequences around the cystine residues in horse growth hormone.";
CC	FT CONFLICT 78 78 C -> P (IN REF. 3).	RT RT "Amino acid sequences around the cystine residues in horse growth hormone.";
CC	FT CONFLICT 116 116 Q -> T (IN REF. 3).	RL Biochem. J. 109:119-24(1968).
CC	FT CONFLICT 195 195 H -> N (IN REF. 4).	CC !- FUNCTION: Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues.
CC	FT CONFLICT 203 203 V -> L (IN REF. 3).	CC !- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC	FT CONFLICT 206 206 C -> S (IN REF. 3).	CC !- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC	SEQUENCE 216 AA; 24429 MW; 0216331D6BE76D14 CRC64;	CC !- SIMILARITY: Belongs to the somatotropin/prolactin family.
CC	Query Match 66.3%; Score 694; DB 1; Length 216;	CC
CC	Best Local Similarity 64.1%; Pred. No. 5e-56;	CC
CC	Matches 139; Conservative 20; Mismatches 42; Indels 16; Gaps 3;	CC
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CC	CC EMBL; U0229; AAA21027.1; -.	CC
CC	CC HSSP; P01246; BST.	CC
CC	CC InterPro; IPR01400; Somatotropin.	CC
CC	CC PFam; PF00103; hormone; 1.	CC
CC	CC PRINTS; PR00836; SOMATOTROPIN.	CC
CC	CC PROSITE; PS00266; SOMATOTROPIN_1; 1.	CC
CC	CC PROSITE; PS00338; SOMATOTROPIN_2; 1.	CC
CC	CC DR Hormone; Pituitary; Signal.	CC
CC	CC FT CHAIN 27 216 SOMATOTROPIN.	CC
CC	CC FT DISULFID 78 189	CC
CC	CC FT SIGNAL 1 26 SOMATOTROPIN.	CC
CC	CC FT SEQUENCE 216 AA; 37AB3173834D1AC CRC64;	CC
Qy	1 MATGSRVSLIAFGLICLPLWQEGSAFPTIPLSLRDNASLRRAHRLHQALDFTYOEF---	DR Query Match 66.2%; Score 693; DB 1; Length 216;
Db	1 MAGPRTSALLAFAFLCLPWPQPSLPAVRAQHHLHQALADTYFERA 60	DR Best Local Similarity 63.6%; Pred. No. 6.1e-56;
Qy	58 -----NPQTSILCFSESIIPTPSNREETQOKSNLLEIRLISLILQSMLEPYQFLRS 106	DR Matches 138; Conservative 22; Mismatches 41; Indels 16; Gaps 3;
Db	61 YIPEGORYSNTAQAAFCFSETIPTAPKGDKAQQRSDVELLRFSLILQSWLGPTQFLSR 120	DR
Qy	107 VFAANSLVYGAQDSNTYDLDLQLEGQTLMLGRLEDSPTRGQIFKOTYSKFDTNHNDAA 166	DR
Db	121 VFTNSLVLFGTSD-RYFEKLQDLEGQALMRELDGSPTAQQLKQTYDFDTNLRSDDA 179	DR
Qy	167 LQKNYGLYCFRKDMKDVKETFLRIVOKS-VEGSCGF 202	DR
Db	180 LKKNYGLLSCPKFDLHKAKTFLRVMKCRFVESSCAF 216	DR
CC	RESULT 11	DR
CC	SOMA_HORSE ID SOMA_HORSE STANDARD; PRT; 216 AA.	DR
AC	P01245; 01, Created)	DR
DT	21-JUL-1986 (Rel. 01, Last sequence update)	DR
DT	01-NOV-1995 (Rel. 32, Last annotation update)	DR
DT	28-FEB-2003 (Rel. 41, Last annotation update)	DR
DE	Somatotropin precursor (Growth hormone).	DR
GN	GH1	DR
OS	Equus caballus (Horse).	DR
OC	Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	DR
OC	Mammalia; Eutheria; Perissodactyla; Equidae; Equus.	DR
NCBI_TaxID	9796;	DR
Qy	1 MATGSRVSLIAFGLICLPLWQEGSAFPTIPLSLRDNASLRRAHRLHQALDFTYOEF---	DR
1 MAAGRPTSVLLAFLGICLPLWQPSLPAVRAQHHLHQALADTYFERA 60	DR	
58 -----NPQTSILCFSESIIPTPSNREETQOKSNLLEIRLISLILQSMLEPYQFLRS 106	DR	

DR	61 YIPFGQRYSQNAAAFCESETIATPDKDEAQRSDELLRFSLLIQLQVQLLSSR 120	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
KW		KW Hormone; Pituitary. Signal. BY SIMILARITY.
FT		FT SIGNAL 1 26
FT		FT CHAIN 27 216 SOMATOTROPIN.
FT		FT DISULFID 78 189 BY SIMILARITY.
FT		FT DISULFID 206 214 BY SIMILARITY.
FT		FT CONFLICT 4 4 S -> G (IN REF. 1).
FT		FT CONFLICT 7 7 N -> T (IN REF. 1).
SQ		SQ SEQUENCE 216 AA; 24468 MN; ABAD1DD59F1DAED CRC64;
Query	1 MATGSRSTLILAGFLNCLPMLQEGSRAFPTPLSLRFDNNSLRLAHLQALAFDTYQBF --- 57	Query Match 65.6%; Score 687; DB 1; Length 216;
Matches	1 MAASPRNSVILLAFLALICLQPQEYCAFPMPLSSIFANAVLRAQHLQALADTYKEFERA 60	Best Local Similarity 63.6%; Pred. No. 2.2e-55;
Matches	58 -----NPOTSLCLCFSESIPTPSNREETOQKSNLLELRISLLLIGQSLEPVQFLRS 106	Mismatches 20; N mismatches 43; Indels 16; Gaps 3;
Db	61 YIPPEGQRYSQNAQAFCFBETIPAPTGDKEAQQSDVELLFSLLLIGQSWLGPYQFLSR 120	
Qy	107 VFANSILVYQASDNTVYDILKDLIEGQTQMLGRLEDDGSPRTGQIPTQYSKFDTNSHNDDA 166	
Db	121 VFTNSLVEGTSRD-RTYKEKRDLEGGTQALMRELEDDGSPRAGQIILQTYDKFDTNLRSDDA 179	
RESULT 12		RESULT 13
ID	SOMA_CANFA STANDARD; PRT; 216 AA.	SONA_FELCA STANDARD; PRT; 216 AA.
AC	P33711; Q9TQF6; (Rel. 28, Created)	ID SONA_FELCA AC P46404;
DT	01-OCT-1994 (Rel. 40, Last sequence update)	DT 01-NOV-1995 (Rel. 32, Created)
DT	16-OCT-2001 (Rel. 41, Last annotation update)	DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT	28-FEB-2003 (Rel. 41, Last annotation update)	DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE	Somatotropin precursor (Growth hormone).	DB Somatotropin precursor (Growth hormone).
GN	GH1 OR GH	GN Felis silvestris catus (Cat).
OS	Canis familiaris (Dog).	OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;	OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OC	Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.	NCBI_TAXID=9615;
OX		NCBI_TAXID=9685;
RN	SEQUENCE FROM N.A.	RN
RP	MEDLINE=94266166; PubMed=8206387;	SEQUENCE FROM N.A.
RA	Asociacion-Martinnez J.A., Barrera-Saldana H.A.;	RP TISSUE=Pituitary;
RA	"A dog growth hormone cDNA codes for a mature protein identical to	RA TISSUE=Pituitary;
RT	"A dog growth hormone cDNA codes for a mature protein identical to	RA TISSUE=Pituitary;
RT	"pig growth hormone."	RA TISSUE=Pituitary;
RT	Gene 143:277-280(1994).	RA TISSUE=Pituitary;
RN		RA TISSUE=Pituitary;
RP	SEQUENCE FROM N.A.	RA TISSUE=Pituitary;
RA	van Leeuwen I.S., Teske B., van Garderen G.R., Mol J.A.;	RA TISSUE=Pituitary;
RT	"Extrahypothalamic growth hormone expression in the dog is initiated at	RA TISSUE=Pituitary;
RT	the normal pituitary transcription start site in the mammary gland and	RA TISSUE=Pituitary;
RT	at multiple upstream sites in lymphoid cells."	RA TISSUE=Pituitary;
RT	Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.	RA TISSUE=Pituitary;
RN		RA TISSUE=Pituitary;
[2]		RA TISSUE=Pituitary;
RP	SEQUENCE FROM N.A.	RA TISSUE=Pituitary;
RA	van Leeuwen I.S., Teske B., van Garderen G.R., Mol J.A.;	RA TISSUE=Pituitary;
RT	"Extrahypothalamic growth hormone expression in the dog is initiated at	RA TISSUE=Pituitary;
RT	the normal pituitary transcription start site in the mammary gland and	RA TISSUE=Pituitary;
RT	at multiple upstream sites in lymphoid cells."	RA TISSUE=Pituitary;
RT	Submitted (MAR-1997) to the EMBL/GenBank/DBJ databases.	RA TISSUE=Pituitary;
RN		RA TISSUE=Pituitary;
[3]		RA TISSUE=Pituitary;
RP	SEQUENCE FROM N.A.	RA TISSUE=Pituitary;
RC	TISSUE=Masitary gland;	RA TISSUE=Pituitary;
RC	MEDLINE=93337113; PubMed=10411306;	RA TISSUE=Pituitary;
RC	Rantinga-van Leeuwen I.S., Oudshoorn M., Mol J.A.;	RA TISSUE=Pituitary;
RC	"Canine mammary growth hormone gene transcription initiates at the	RA TISSUE=Pituitary;
RT	pituitary-specific start site in the absence of Pit-1.";	RA TISSUE=Pituitary;
RT	RT Pituitary-specific start site in the absence of Pit-1.";	RA TISSUE=Pituitary;
RL	RT Pituitary-specific start site in the absence of Pit-1.";	RA TISSUE=Pituitary;
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CC	CC or send an email to license@isb-sib.ch).	CC or send an email to license@isb-sib.ch).
CC	CC -!- SUBCELLULAR LOCATION: Belongs to the somatotropin/prolactin family.	CC -!- SUBCELLULAR LOCATION: Belongs to the somatotropin/prolactin family.
CC	CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.	CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.
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DR	EMBL; Z23067; CA80601.1; -	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	U92533; AAF21502.1; -	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	AF069071; AAD43366.1; -	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	PIR; I46145; I46145.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	HSSP; P01246; 18ST.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	InterPro; IPR00400; Somatotropin.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	Pfam; PF00103; hormone; 1.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	PRINTS; PR00103; hormone; 1.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.	DR PROSITE; PS00266; SOMATOTROPIN_1; 1.

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CC EMBL; U25973; AAA67294.1; -.  
 DR EMBL; U13390; AAA96142.1; -.  
 DR PIR; JC4632; JC4632.  
 DR HSSP; P01246; 1B5T.  
 DR InterPro; IPR001400; Somatotropin.  
 PFam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSTOB; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary; Signal.

FT SIGNAL 1 26 BY SIMILARITY.  
 CHAIN 27 216 SOMATOTROPIN.  
 FT DISULFID 78 189 BY SIMILARITY.  
 FT DISULFID 206 214 BY SIMILARITY.  
 FT CONFLICT 7 7 N -> T (IN REF. 2).  
 FT CONFLICT 26 26 T -> A (IN REF. 2).  
 FT CONFLICT 159 159 G -> A (IN REF. 2).  
 FT CONFLICT 181 181 L -> P (IN REF. 2).  
 SQ SEQUENCE 216 AA; 24454 MW; 0582039ATD292C6 CRC64;

Query Match 65.6%; Score 687; DB 1; Length 216;

Best Local Similarity 63.6%; Pred. No. 2.2e-55; Mismatches 20; Indels 16; Gaps 3;

Qy 1 MATGSPRSILIAFLGILCIPWLGQGSAAPTTIPSLRIFDQNSLDRAHRIHQLAFTDQFEE--- 57  
 Db 1 MAAGPRNSVLLAFAFLCLPWPQEVGTFAPEMLSSLFANAVERAQLHQLAATYKEFFERA 60  
 Qy 58 -----NPQTSLOCSFSEIPTPSNREETQQKSNSNLERLIRISLIIQSWEVPLFRLS 106  
 \* Db 61 YIPEGQRYSSIONQAAQTCFSETIPTAPGKEAQQSMELLRLFSLILQIQLQVPLSLR 120  
 Qy 107 VFANSLYVGASPDNSVYDILKDLIEGIIOTLMLGRLEDGSPTRGCFKQTYSKEDTNSHINDDA 166  
 Db 121 VFTNSLVFGTSR-RVYEKLKDLEGGIAQMLRELEDGSPPRGQQLKQTYDKEDTNRSSDDA 179  
 Qy 167 LIKNYGUYCERKMDKYETELPIVQCRS-VEGSCGF 202  
 Db 180 LIKNYGILSCFKDLHKAETYLVRMKCRRFVESSCAF 216

## RESULT 14

SOMA\_MESAU ID SOMA\_MESAU STANDARD; PRT; 216 AA.  
 AC P37886; PRT; 216 AA.

DT 01-OCT-1994 (Rel. 30, Created)  
 DT 01-OCT-1994 (Rel. 30, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin precursor (Growth hormone).  
 GN GH.  
 OS Eusocricetus auratus (Golden hamster).  
 OC Mammalia; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mesocricetus auratus; Rodentia; Sciurognathi; Muridae; Cricetinae;  
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagidae.  
 OX NCBI\_TaxID:10036;

RN [1] RN SEQUENCE FROM N.A.  
 RP MEDLINE=92063850; PubMed=1954881; RPT; 216 AA.  
 RA Southard J.N., Sanchez-Jimenez F., Campbell G.T., Talamantes F.;  
 RT "Sequence and expression of hamster prolactin and growth hormone messenger RNAs";  
 RL Endocrinology 129:295-297 (1991).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

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 CC or send an email to license@isb-sib.ch).  
 CC EMBL; S66299; AA20368.1; -.  
 DR PIR; B49159; B49159.  
 DR HSSP; P01246; 1B5T.  
 DR InterPro; IPR01400; Somatotropin.  
 PFam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary; Signal.  
 SIGNAL 1 26 BY SIMILARITY.  
 FT CHAIN 27 216 SOMATOTROPIN.  
 FT DISULFID 78 189 BY SIMILARITY.  
 FT DISULFID 206 214 BY SIMILARITY.  
 FT CONFLICT 7 7 N -> T (IN REF. 2).  
 FT CONFLICT 26 26 T -> A (IN REF. 2).  
 FT CONFLICT 159 159 G -> A (IN REF. 2).  
 FT CONFLICT 181 181 L -> P (IN REF. 2).  
 SQ SEQUENCE 216 AA; 24454 MW; 0582039ATD292C6 CRC64;

## Query Match 65.1%; Score 682; DB 1; Length 216;

Best Local Similarity 63.1%; Pred. No. 6.2e-55; Mismatches 21; Indels 16; Gaps 3;

Matches 137; Conservative 21; Signal 43;

DR SEQUENCE 216 AA; 24460 MW; 3B69CE32AB6F1166 CRC64;

Query Match 65.1%; Score 682; DB 1; Length 216;

Best Local Similarity 63.1%; Pred. No. 6.2e-55; Mismatches 21; Indels 16; Gaps 3;

Matches 137; Conservative 21; Signal 43;

DR SEQUENCE 216 AA; 24460 MW; 3B69CE32AB6F1166 CRC64;

Query 1 MATGSRSTSLIAFLGILCIPWLGQGSAAPTTIPSLRIFDQNSLDRAHRIHQLAFTDQFEE--- 57  
 Db 1 MAADSSQTSRLATETLCLWLPDEAGAPAMPSSLFAVRAQHHLQAAADTYKEPERA 60  
 Qy 58 -----NPQTSLOCSFSEIPTPSNREETQQKSNSNLERLIRISLIIQSWEVPLFRLS 106  
 Qy 61 YIPEGQRYSSIONQAAQTCFSETIPTAPGKEAQQSMELLRLFSLILQIQLQVPLSLR 120  
 Db 61 YIPEGQRYSSIONQAAQTCFSETIPTAPGKEAQQSMELLRLFSLILQIQLQVPLSLR 120  
 Qy 107 VFANSLYVGASPDNSVYDILKDLIEGIIOTLMLGRLEDGSPTRGCFKQTYSKEDTNSHINDDA 166  
 Db 121 VFTNSLVFGTSR-RVYEKLKDLEGGIAQMLRELEDGSPPRGQQLKQTYDKEDTNRSSDDA 179  
 Qy 167 LIKNYGUYCERKMDKYETELPIVQCRS-VEGSCGF 202  
 Db 180 LIKNYGILSCFKDLHKAETYLVRMKCRRFVESSCAF 216

Result 15

SOMA\_RABBIT ID SOMA\_RABBIT STANDARD; PRT; 216 AA.  
 AC P46407; PRT; 216 AA.  
 DT 01-NOV-1995 (Rel. 32, Created)  
 DT 01-NOV-1995 (Rel. 32, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin precursor (Growth hormone).  
 GN GH.  
 OS Oryctolagus cuniculus (Rabbit).  
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagidae.  
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagidae.  
 OX NCBI\_TaxID:9986;  
 RN [1] RN SEQUENCE FROM N.A.  
 RP MEDLINE=92063850; PubMed=1954881;  
 RA Southard J.N., Sanchez-Jimenez F., Campbell G.T., Talamantes F.;  
 RT "Sequence and expression of hamster prolactin and growth hormone messenger RNAs";  
 RL Endocrinology 129:295-297 (1991).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

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 CC  
 EMBL: Z38127; CA86387.1; -  
 DR PIR: S49483; S49483.  
 DR HSSE; P01246; 1B5T.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PRO0836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 DR Hormone; Pituitary; Signal.  
 FT SIGNAL 1 26 POTENTIAL.  
 FT CHAIN 27 216 SOMATOTROPIN.  
 FT DISULFID 78 189 BY SIMILARITY.  
 FT DISULFID 206 214 BY SIMILARITY.  
 FT SEQUENCE 216 AA; 24433 MW; 6ECL19748199FD975 CRC64;  
 SQ  
 Query Match 65.1%; Score 682; DB 1; Length 216;  
 Best Local Similarity 63.1%; Pred. No. 6.2e-55;  
 Matches 137; Conservative 21; Mismatches 43; Indels 16; Gaps 3;  
 OY 1 MATGSSPSSLLAFLGLLPLWQEGSAFPTIPLSRLEDNASLRHRLHQLADPTYDFB--- 57  
 Db 1 MAAGSWTAGLIAFLALCLPWPQEASAFPAMPSSLFANAVLRQHHLQAAADTYKEFERA 60  
 OY 58 -----NPOTSLCFSESIPTPSNREETOKSNLELRISLILQSWLEPYQFLRS 106  
 Db 61 YIPEGGRYSTONAQAACFCSETIAPDGDAQQSDMELLRFSLLIQSMLGPYQLFSR 120  
 \* OY 107 VFAANSLVYGASDSDNYDILKDLEGQTLMGRLEGSPTGQIPTQYSKFDTNHNDAA 166  
 Db 121 AFTNTVFGTD-RYEKLDLEGQALMRELEDSPRVQLQTYDKEFDTNURGDDA 179  
 OY 167 LILKNYGLLYCPFKDMXKVEPLRIVQCRS-VEGSCSF 202  
 Db 180 LILKNYGLLSCKFDLHKAEYLVMKCRREVSSCVF 216

Search completed: July 12, 2004, 13:04:24  
 Job time : 18 secs

Result No.	Score	Query	Match	Length	DB	ID	Description
1	95.7	91.4	202	4	O14643		014643 homo sapien
2	908.5	86.8	217	6	Q8wna0	ateles geoffroyi	Q8wna0 atelis geof
3	882.5	84.3	217	6	Q866w0	pan troglodytes	Q866w0 pan troglod
4	873.5	83.4	217	4	Q14407	homo sapien	Q14407 homo sapien
5	866.5	82.8	217	6	Q07369	macaca mulatta	Q07369 macaca mula
6	855.5	81.7	217	6	Q866t0	pan troglodytes	Q866t0 pan troglod
7	853.5	81.5	217	6	Q866w0	pan troglodytes	Q866w0 pan troglod
8	831.5	81.2	217	6	Q07367	macaca mulatta	Q07367 macaca mula
9	831.5	79.4	212	6	Q07368	macaca mulatta	Q07368 macaca mula
10	779.5	74.5	199	4	Q14406	homo sapien	Q14406 homo sapien
11	754.5	72.1	217	6	Q8wna0	ateles geoffroyi	Q8wna0 atelis geof
12	751.5	71.8	217	6	Q866t0	pan troglodytes	Q866t0 pan troglod
13	728.5	69.6	217	6	Q866t0	callithrix jacchus	Q866t0 callithrix
14	726.5	67.4	217	6	Q866t0	pan troglodytes	Q866t0 pan troglod
15	702.5	67.0	216	6	Q866t0	delphinus delphis	Q866t0 delphinus d
16	701.0	67.0	216	6	Q7YQB8	hippopotamus amphibius	Q7YQB8 hippopotamu

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

RESULT 1  
O14643 PRELIMINARY;  
ID O14643; AC O14643;  
AC DT 01-JAN-1998 (TREMBLrel. 05, Created);  
DT 01-JUN-1998 (TREMBLrel. 05, Last sequence update);  
DT 01-JUN-2003 (TREMBLrel. 24, Last annotation update);  
DE Placental growth hormone 20kDa isoform precursor.  
GN HGH-Y.  
OS Homo sapiens (Human).  
OC Bivalvia; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Butherida; Primates; Catarrhini; Hominidae; Homo.  
[1]\_TAXID=9606;  
NCBI\_TAXID=9606;

SEQUENCE FROM N.A.  
RP PRELIMINARY;  
TISSUE=Term placenta;  
MEDLINE=983737; PubMed=970963; Svensson P.A., Jansson T., Clark R.,  
RA Boguszewski C.I., Carlsson B.;  
RA Carlsson I.M.S., Carlsson B.;  
RT "Cloning of two novel growth hormone transcripts expressed in human  
placenta.";  
RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).  
DR EMBL AP06067; AAC71822; 1. -.  
DR HSSP\_P01241; 1A22.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro\_IPRO01400; Somatotropin.  
DR Pfam:PF00103; hormone\_1.  
DR PRINTS\_PR0836; SOMATOTROPIN.  
DR PROSITE\_PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE\_PS00338; SOMATOTROPIN\_2; 1.  
DR KWN Signal.  
FT SIGNAL.  
SQ SEQUENCE 202 AA; 23128 MW; 38B64D011A9197C6 CRC64;  
Query Match 91.4%; Score 957; DB 4; Length 202;  
Best Local Similarity 92.6%; Pred. No. 4.6e-83;  
Matches 187; Conservative 4; Mismatches 11; Indels 0; Gaps 0;

Qy	1 MATGSRSTILLAFGLLCLPWLQEGSAFPTIPLSRFLDNASLRAHRLHQLAFTDLYQEFNPQ 60	DT 01-OCT-2003 (TREMBLrel. 25, Last annotation update)
Db	1 MAAGSRTSLLAFTLLCLPWLQEGSAFPTIPLSRFLDNASLRAHRLHQLAFTDLYQEFNPQ 60	DE Placental lactogen PL-A.
Qy	61 TSLCFSESLPTPSNREETQOKSNLELLRISLILLIQSMLEPVQFIRSVPANSLYGASSN 120	OS Pan troglodytes (Chimpanzee).
Db	61 TSLCFSESLPTPSNREKQOKSNLELLRISLILLIQSMLEPVQFIRSVPANSLYGASSN 120	OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Qy	121 YVDLJLKDLEGITQMLGRLEDGSPRTGQIFKQTSKFDNSHNDALLKNYGLYCFKRD 180	OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.
Db	121 YVRHKLKDLEGITQMLMRLEDGSPRTGQIFNQTSKFDNSHNDALLKNYGLYCFKRD 180	OX NCBI_TaxID=9598;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RN [1] _
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	SEQUENCE FROM N.A.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RP Resvol A., Resquivel D.B., Barrera H.S.;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RL Submitted (AUG-2002) to the EMBL/GenBank/DBJ databases.
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DR EMBL: AY146635; AAN84505.1;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	GO: GO:0005546; C:extracellular; IEA.
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	GO: GO:0005179; F: hormone activity; IEA.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	DR InterPro: IPR001400; Somatotropin.
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DR Pfam: PF01036; Somatotropin.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	DR PRINTS: PR00336; SOMATOTROPIN_1;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DR PROSITE: PS00266; SOMATOTROPIN_2;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	DR PROSITE; PS00338; SOMATOTROPIN_2;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	SQ 217 AA; 25081 MW; C74B6262D8A93060 CRC64;
RESULT 2		
QBWNNE0	QBWNNE0 PRELIMINARY;	Query Match 88.3%; Score 882.5%; DB 6;
AC	QBWNNE0;	Best Local Similarity 80.6%; Pred. No. 6.3e-76;
DT	01-MAR-2002 (TREMBLrel. 20, Created)	Matches 175; Conservative 9; Mismatches 18; Indels 15; Gaps 1;
DT	01-MAR-2002 (TREMBLrel. 20, Last sequence update)	
DT	01-JUN-2003 (TREMBLrel. 24, Last annotation update)	
DE	Growth hormone.	
GN	Atelopus geoffroyi (Black-handed spider monkey).	
OS	Atelopidae; Chordata; Craniata; Vertebrata; Euteleostomi;	
OC	Eukaryota; Metazoa; Anthropoidean lineages.	
OC	Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Atelinae.	
NCBI_TaxID	9509; [1]	
RN		
RP	SEQUENCE FROM N.A.	
Qy	RA Resvol A., Resquivel D., Santiago D., Barrera-Saldana H.;	
RT	"Independent duplication of the growth hormone gene in three	
RT	Anthropoidean lineages".	
RL	Submitted (APR-2001) to the EMBL/GenBank/DBJ databases.	
DR	EMBL: AF374234; AAL72286.1; [1]	
DR	GO: GO:000576; C:extracellular; IEA.	
DR	GO: GO:0005179; F: hormone activity; IEA.	
DR	InterPro: IPR001400; Somatotropin.	
DR	PRINTS: PR00336; SOMATOTROPIN.	
DR	PROSITE: PS00266; SOMATOTROPIN_1.	
DR	PROSITE; PS00338; SOMATOTROPIN_2.	
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RESULT 4
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	Q14407 ID Q14407 PRELIMINARY; PRT; 217 AA.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	AC Q14407; PRELIMINARY; PRT; 217 AA.
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DT 01-NOV-1996 (TREMBLrel. 01, Created)
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DT 01-OCT-2003 (TREMBLrel. 25, Last annotation update)
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	DE Chorionic somatomammotropin CS-2 (Chorionic somatomammotropin hormone 2).
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	DE Homo sapiens (Human).
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	OS Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	OX NCBI_TaxID=9606;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RN [1] _
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RP SEQUENCE FROM N.A.
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RX MEDLINE=95102777; PubMed=2744760;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RA Seburg F.H.;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RA "The human growth hormone locus: nucleotide sequence, biology, and
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RT evolution";
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RT outside of Alu repeats";
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RL Science 250:1745-1748 (1990).
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RN [2] _
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RP SEQUENCE FROM N.A.
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RX MEDLINE=91102558; PubMed=1980158;
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RA Veneczel-Jones C.L., Phillips J.A. III;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RA "Hot spots for growth hormone gene deletions in homologous regions
Db	181 MDKVETFLRIVQCRSVEGSGCF 202	RT TISSUE=Placenta;
Qy	181 MDKVETFLRIVQCRSVEGSGCF 202	RC

RA	Strausberg R. ;	Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.	Matches 168; Conservative 14; Mismatches 20; Indels 15; Gaps 1;
RL			
DR	EMBL; J03204; AAH2204.1; -.		Qy 1 MATGSRSLILLAFGLLCLPWLQEGSAPFTIPLSRFDNSLRAHRLQALAFDTYQEF-- 57
DR	EMBL; BC02204; AAH2204.1; -.		Db 1 MAAGSRSLILLAFGLLCLPWLQEGSAPFTIPLSRFDNSLRAHRLQALAFDTYQEF-- 57
DR	EMBL; BC03596; AAH35965.1; -.		
DR	PIR; E32435; E32435.		
DR	HSSP; P01241; 1A22.		
DR	GO; GO:0005179; C:extracellular; IEA.		
DR	GO; GO:0005179; F:hormone activity; IEA.		
DR	InterPro; IPR001400; Somatotropin.		
DR	PFAM; PF000103; hormone.1.		
DR	PRINTS; PRO0836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.		
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.		
DR	SEQUENCE; 217 AA; 24994 MW; 39PACDB62E951 CRC64;		
Qy	Query Match 83.4%; Score 873.5; DB 4; Length 217;		
Best Local Similarity 79.3%; Pred. No. 4. Ge-75;			
Matches 172; Conservative 11; Mismatches 19; Indels 15; Gaps 1;			
RESULT 6			
Qy	1 MATGSRSLILLAFGLLCLPWLQEGSAPFTIPLSRFDNSLRAHRLQALAFDTYQEF-- 57	Q86678 ID 086678 PRELIMINARY; PRT; 217 AA.	
Db	1 MAAGSRSLILLAFGLLCLPWLQEGSAPFTIPLSRFDNSLRAHRLQALAFDTYQEF-- 60	AC Q86678; DT 01-JUN-2003 (TREMBLrel. 24, Last sequence update)	
Qy	58 -----NPQTSLCFSSEIPTPNREETQKSNLLELLRISLLIQSMLEPVQFLR 105	DT 01-JUN-2003 (TREMBLrel. 24, Last sequence update)	
Db	61 YIPKDQKYSFLDQSQTSSCPSDQTSNMEEETQKSNLLELLRISLLIQSMLEPVQFLR 120	DT 01-OCT-2003 (TREMBLrel. 25, Last annotation update)	
Qy	106 SVFANSILVYGASDNSVYDILKDLLEGQIOTLMGRLEDSSPRTGQIFKQTSKEDTNSHND 165	DB Placental lactogen (Chimpanzee).	
Db	121 SMFANILVYDTSDDYHLLKDLLEGQIOTLMGRLEDSSPRTGQIFKQTSKEDTNSHND 180	OS Pan troglodytes (Chimpanzee). OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; OC Mammalia; Butheria; Primates; Catarrhini; Hominidae; Pan.	
Qy	166 ALLKNGYSLVYCFKDMQKVEFLTRIVQCRSVEGSCGF 202	OX NCBI_TaxID=9598; RN [1]_SEQUENCE FROM N.A.	
Db	181 ALLKNGYSLVYCFKDMQKVEFLTRIVQCRSVEGSCGF 217	RA Revol A., Esquivel D.B., Barrera H.S.; RA "The GH-PL locus hot-point between human and chimpanzee genomes." ; RT "The GH-PL locus hot-point between human and chimpanzee genomes." ; RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.	
RESULT 5			
Q073369	Q073369 PRELIMINARY; PRT; 217 AA.	Q073369 ID 073369 PRELIMINARY; PRT; 217 AA.	
AC	Q07363; 01-NOV-1996 (TREMBLrel. 01, Created)	AC Q07363; 01-NOV-1996 (TREMBLrel. 01, Created)	
DT	01-NOV-1996 (TREMBLrel. 01, Last sequence update)	DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)	
DT	01-NOV-1996 (TREMBLrel. 24, Last annotation update)	DT 01-NOV-1996 (TREMBLrel. 24, Last annotation update)	
DE	Chorionic somatomammotropin-3.	DE Chorionic somatomammotropin-3.	
OS	Macaca mulatta (Rhesus macaque).	OS Macaca mulatta (Rhesus macaque).	
OC	Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;	OC Bukaryota; Metazoa; Primates; Catarrhini; Cercopithecidae;	
OC	Mammalia; Butheria; Primates; Cercopithecidae;	OC Macaca.	
OX	NCBI_TaxID=9544; RN [1]_SEQUENCE FROM N.A.	OX NCBI_TaxID=9544; RN [1]_SEQUENCE FROM N.A.	
RC	TISSUE=Mid pregnancy placenta;	RC TISSUE=Mid pregnancy placenta;	
RX	MEDLINE=94008724; PubMed=1404617;	RX MEDLINE=94008724; PubMed=1404617;	
RA	Golos T.G.; Durnung M.; Fisher J.M.; Fowler P.D. ;	RA Golos T.G.; Durnung M.; Fisher J.M.; Fowler P.D. ;	
RT	"Cloning of four growth hormone/chorionic somatomammotropin-related	RT "Cloning of four growth hormone/chorionic somatomammotropin-related	
RT	complementary deoxyribonucleic acids differentially expressed during	RT complementary deoxyribonucleic acids differentially expressed during	
RT	pregnancy in the rhesus monkey placenta." ;	RT pregnancy in the rhesus monkey placenta." ;	
RL	Endocrinology 133:1744-1752 (1993) .	RL Endocrinology 133:1744-1752 (1993) .	
DR	EMBL; L165554; AAA18841.1; -.	DR EMBL; L165554; AAA18841.1; -.	
DR	PIR; 167409; 167409.	DR PIR; 167409; 167409.	
DR	HSSP; P01241; TAXI.	DR HSSP; P01241; TAXI.	
DR	GO; GO:0005179; C:extracellular; IEA.	DR GO; GO:0005179; F:hormone activity; IEA.	
DR	InterPro; IPR001400; Somatotropin.	DR InterPro; IPR001400; Somatotropin.	
DR	PFAM; PF000103; hormone.1.	DR PFAM; PF000103; hormone.1.	
DR	PRINTS; PRO0836; SOMATOTROPIN.	DR PRINTS; PRO0836; SOMATOTROPIN.	
DR	PROSITE; PS00266; SOMATOTROPIN_1; 1.	DR PROSITE; PS00266; SOMATOTROPIN_1; 1.	
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.	DR PROSITE; PS00338; SOMATOTROPIN_2; 1.	
DR	SEQUENCE; 217 AA; 24874 MW; FILE6AFDBBA1B185 CRC64;	DR SEQUENCE; 217 AA; 24874 MW; FILE6AFDBBA1B185 CRC64;	
Qy	Query Match 82.8%; Score 866.5; DB 6; Length 217;		
Best Local Similarity 77.4%; Pred. No. 2.1e-74;			

DT	01-OCT-2003 (TREMBurel. 25, Last annotation update)	SQ	SEQUENCE	217 AA;	24942 MW;	PF5AA8915131.F2BC CRC64;
DE	Placental lactogen PL-B.		Query Match	81.2%;	Score 850.5;	DB 6;
OS	Pan troglodytes (Chimpanzee).		Best Local Similarity	75.6%;	Pred. No. 7.1e-73;	Length 217;
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;		Matches 164;	Conservative	18;	Mismatches 20;
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.		Indels	15;	Gaps	1;
RN	NCBI_TaxID=9598;					
[1]	SEQUENCE FROM N.A.	QY	1 MATGSRSTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--	57		
RP	Revol A., Esquiro D.E., Barrera H.S.;	Db	1 MAAGSRTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60			
RT	"The GH-PL locus a hot-point between human and chimpanzee genomes."					
RL	Submitted (AUG-2002) to the EMBL/GenBank/DBJ databases.	QY	58 -----NPOTSLCFSESIPPTPSRRETOQKSNLELLRISLLIQSWEVQFLR 105			
DR	EMBL; AXI46226; AAN84506_1;	Db	61 YIPKPKHSLMENPQASFCAFDSPPTPSNLQETQKSNLELLRISLLIQSWEVQFLS 120			
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.	QY	106 SVFANSLVGASDSNVYDQFLKDEGQIYKQTYSKFDTNSHND 165			
DR	InterPro; IPR01400; Somatotropin.	Db	121 SVFANNLHHTSDSDVHDLIKDLEGGIETLMWRLEDGIRPTGHFKQTYSKFDTNSHND 180			
PRINTS	PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00366; SOMATOTROPIN_1.	QY	166 ALLKNYGLYCFRKDMKDVETELRIVQCRSVEGSGCF 202			
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.	Db	181 SLLKNGLICLFCFRKDMKDVETELRIVQCRSVEGSGCF 217			
SEQUENCE	217 AA; AAI63257499827D4 CRC64;					
Query Match	81.5%; Score 853.5;	DB 6;	Length 217;			
Best Local Similarity	77.9%;	Pred. No. 3.7e-73;	22;	Indels	15;	Gaps 1;
Matches 169;	Conservative	11;	Mismatches 22;			
RESULTS	9					
QD	Q07368 PRELIMINARY; PRT; 212 AA.					
AC	Q07368					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DT	01-JUN-2003 (TREMBurel. 24, Last annotation update)					
DR	Somatotropin 2 precursor (Growth hormone 2) (Fragment).					
OS	Macaca mulatta (Rhesus macaque).					
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;					
OC	Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;					
OC	Cercopithecinae; Macaca.					
NCBI_TaxID=9544;						
RN	SEQUENCE FROM N.A.					
RC	TISSUE=Placenta;					
RX	Medline:94008724; PubMed:8404617;					
RA	Galos T.G., Durnring M., Fisher J.M., Fowler P.D.;					
RT	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
RT	Endocrinology 13:1744-1752 (1993).					
RL	DR EMBL; L16553; AAA18840_1; -.					
DR	PIR; 167408; 167408.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	8					
QD	Q07367 PRELIMINARY; PRT; 217 AA.					
AC	Q07367					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DT	01-JUN-2003 (TREMBurel. 24, Last annotation update)					
DR	Chorionamnion-1.					
OS	Macaca mulatta (Rhesus macaque).					
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;					
OC	Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;					
OC	Cercopithecinae; Macaca.					
NCBI_TaxID=9544;						
RN	SEQUENCE FROM N.A.					
RC	TISSUE=Midpregnancy placenta;					
RX	Medline:94008724; PubMed:8404617;					
RA	Galos T.G., Durnring M., Fisher J.M., Fowler P.D.;					
RT	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
RT	Endocrinology 13:1744-1752 (1993).					
RL	DR EMBL; L16553; AAA18839_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	6					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DR	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
DR	Endocrinology 13:1744-1752 (1993).					
DR	EMBL; L16553; AAA18840_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	57					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DR	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
DR	Endocrinology 13:1744-1752 (1993).					
DR	EMBL; L16553; AAA18839_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	57					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DR	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
DR	Endocrinology 13:1744-1752 (1993).					
DR	EMBL; L16553; AAA18839_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	57					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DR	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
DR	Endocrinology 13:1744-1752 (1993).					
DR	EMBL; L16553; AAA18839_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	57					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-1996 (TREMBurel. 01, Last sequence update)					
DR	"Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta."					
DR	Endocrinology 13:1744-1752 (1993).					
DR	EMBL; L16553; AAA18839_1; -.					
DR	PIR; 153267; 153267.					
DR	HSSP; P01241; TAXI.					
DR	GO; GO:0005576; C:extracellular; IEA.					
DR	GO; GO:0005179; F:hormone activity; IEA.					
DR	InterPro; IPR01400; Somatotropin.					
DR	PFAM; PF00103; hormone_1.					
DR	PRINTS; PR00836; SOMATOTROPIN.					
DR	PROSITE; PS00338; SOMATOTROPIN_2.					
FT	NON TER 1					
SQ	SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;					
Query Match	79.4%; Score 831.5;	DB 6;	Length 212;			
Best Local Similarity	75.5%;	Pred. No. 4.4e-71;				
Matches 160;	Conservative	18;	Mismatches 19;	Indels	15;	Gaps 1;
RESULTS	57					
QD	1 RTSLIAGLICLPLWQEGSAFFPTIPLSLRFDNASLRARHLHQAFDTYQEF--					
AC	1 RTSLIAGLICLPLWQEGRAVTPQVLSRFLKQAMPAHQAFDTYQEFEEA 60					
DT	01-NOV-1996 (TREMBurel. 01, Created)					
DT	01-NOV-199					

QY	171	YGLLYCFRKMDKVKETLRTIYCRSYEGSCGF	202
Db	181	YGLLHCFRKMDMVETLRTMVCRTVEGSCGF	212
RESULT 10			
	Q14406	PRELIMINARY;	PRT; 199 AA.
ID	Q14406; AC		
DT	01-NOV-1996 (TREMBLrel. 01, Created)		
DT	01-JUN-2003 (TREMBLrel. 24, Last sequence update)		
DE	Chorionic somatomammotropin CS-5.		
RA	Chen E.Y. Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E., Seuberg P.H.; "The human growth hormone locus: nucleotide sequence, biology, and evolution." Genomics 4:479-497(1989).		
RA	Vnencak-Jones C.L., Phillips J.A. III; "Hot spots for growth hormone gene deletions in homologous regions outside of Alu repeats." Science 250:1745-1748(1990).		
DR	J03071; AAA522550.1; -.		
DR	PIR; B32435; B32435.		
DR	HSSP; P01241; 1A22.		
DR	GeneID: 2442; CSHL1.		
GO	GO:0005179; P: hormone activity; NAS.		
InterPro	IPR01400; Somatotropin.		
PFam	PF00103; hormone.1.		
PRINTS	PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1; PROSITE; PS00338; SOMATOTROPIN_2; PROSITE; PS00339; MW; 7417451B75C053E CRC64;		
RN	SEQUENCE FROM N.A. MEDLINE=830727; PubMed=2744760; RX		
RN	Chen E.Y. Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E., Seuberg P.H.; "The human growth hormone locus: nucleotide sequence, biology, and evolution." Genomics 4:479-497(1989).		
RA	Chen E.Y. Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E., Seuberg P.H.; "The human growth hormone locus: nucleotide sequence, biology, and evolution." Genomics 4:479-497(1989).		
RA	Vnencak-Jones C.L., Phillips J.A. III; "Hot spots for growth hormone gene deletions in homologous regions outside of Alu repeats." Science 250:1745-1748(1990).		
DR	J03071; AAA522550.1; -.		
DR	PIR; B32435; B32435.		
DR	HSSP; P01241; 1A22.		
DR	GeneID: 2442; CSHL1.		
GO	GO:0005179; P: hormone activity; NAS.		
InterPro	IPR01400; Somatotropin.		
PFam	PF00103; hormone.1.		
PRINTS	PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1; PROSITE; PS00338; SOMATOTROPIN_2; PROSITE; PS00339; MW; 7417451B75C053E CRC64;		
RESULT 11	QBWN9	PRELIMINARY;	PRT; 217 AA.
ID	QBWN9; AC		
DT	01-MAR-2002 (TREMBLrel. 20, Created)		
DT	01-MAR-2002 (TREMBLrel. 20, Last sequence update)		
DT	01-JUN-2003 (TREMBLrel. 24, Last annotation update)		
DE	Growth hormone GH-V.		
RA	Wallis O.C., Wallis M.; "Characterization of the GH gene cluster in a new-world monkey, the marmoset (Callithrix jacchus)." J. Mol. Endocrinol. 01-0-0(2002).		
DR	AE489811; CAD34012.1; -.		
DR	GO:0005576; C: extracellular; IEA.		
DR	IPR005179; P: hormone activity; IEA.		
DR	IPR01400; Somatotropin.		
DR	Pfam; PF00103; hormone.1.		
DR	PRINTS; PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00338; SOMATOTROPIN_1; PROSITE; PS00339; MW; 5ECF14879827F1A CRC64;		
RN	SEQUENCE FROM N.A. MEDLINE=830727; PubMed=2744760; RX		
RN	Chen E.Y. Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E., Seuberg P.H.; "The human growth hormone locus: nucleotide sequence, biology, and evolution." Genomics 4:479-497(1989).		
RA	Chen E.Y. Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gellinas R.E., Seuberg P.H.; "The human growth hormone locus: nucleotide sequence, biology, and evolution." Genomics 4:479-497(1989).		
RA	Vnencak-Jones C.L., Phillips J.A. III; "Hot spots for growth hormone gene deletions in homologous regions outside of Alu repeats." Science 250:1745-1748(1990).		
DR	J03071; AAA522550.1; -.		
DR	PIR; B32435; B32435.		
DR	HSSP; P01241; 1A22.		
DR	GeneID: 2442; CSHL1.		
GO	GO:0005179; P: hormone activity; NAS.		
InterPro	IPR01400; Somatotropin.		
PFam	PF00103; hormone.1.		
PRINTS	PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00266; SOMATOTROPIN_1; PROSITE; PS00338; SOMATOTROPIN_2; PROSITE; PS00339; MW; 7417451B75C053E CRC64;		
RESULT 12	QBMI74	PRELIMINARY;	PRT; 217 AA.
ID	QBMI74; AC		
DT	01-OCT-2002 (TREMBLrel. 22, Created)		
DT	01-OCT-2002 (TREMBLrel. 22, Last sequence update)		
DE	Growth hormone-like protein 6 precursor.		
GN	GHLP6		
OS	Callithrix jacchus (Common marmoset).		
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Butteleostomi; Callithrixidae; Callithrix; Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.		
NCBI_TaxID	9483; MW; 119556E87AFD55C3 CRC64;		
RN	SEQUENCE FROM N.A.		
RA	Wallis O.C., Wallis M.; "Characterization of the GH gene cluster in a new-world monkey, the marmoset (Callithrix jacchus)." J. Mol. Endocrinol. 01-0-0(2002).		
DR	AE489811; CAD34012.1; -.		
DR	GO:0005576; C: extracellular; IEA.		
DR	IPR005179; P: hormone activity; IEA.		
DR	IPR01400; Somatotropin.		
DR	Pfam; PF00103; hormone.1.		
DR	PRINTS; PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00338; SOMATOTROPIN_1.		
RN	SEQUENCE FROM N.A.		
RA	Wallis O.C., Wallis M.; "Characterization of the GH gene cluster in a new-world monkey, the marmoset (Callithrix jacchus)." J. Mol. Endocrinol. 01-0-0(2002).		
DR	AE489811; CAD34012.1; -.		
DR	GO:0005576; C: extracellular; IEA.		
DR	IPR005179; P: hormone activity; IEA.		
DR	IPR01400; Somatotropin.		
DR	Pfam; PF00103; hormone.1.		
DR	PRINTS; PR00836; SOMATOTROPIN.		
DR	PROSITE; PS00338; SOMATOTROPIN_2; 1.		
KW	POTENTIAL.		
FT	1	26	
FT	CHAIN	27	
SEQ	SEQUENCE	217 AA; 25177 MW; 5ECF14879827F1A CRC64;	
Query Match	71.8%	Score 751.5; DB 6; Length 217;	

Best Local Similarity 67.7%; Pred. No. 1.9e-63; Matches 147; Conservative 23; Mismatches 32; Indels 15; Gaps 1;

QY 1 MATGERTSLIILAGLICLPLQEGSAPPTPLSLRFLDNASLRRAHLHQAFDTYQFQF -- 57

DB 1 MAAGSRMSLIMAFALLCPLPQETGALPRLPRLGFDAMLRQLHLAETYREFEKN 60

QY 58 -----NPOTSLCSESSETPSNREETQOKNSLELLRISLLQSLWEPVQFLR 105

DB 61 CVPKEQKYFFLRLNPFVCSESEIPFHKEMLGSKVNLLHTSLLQSWLBMQRUG 120

QY 106 SVEANSLVYGAQDSNVYDLIKDLEGQITQMLGRLEDGSPRTGQIFKQTYSKFDTNHND 165

DB 121 SIFANSQLHS1VNTDVYELKDLLEGQITQMLGRLEDGSPOTGEIFRQTYSKFDRLHND 180

QY 166 ALLKNYGLLICFCKDMKVTFLRIVQCRSYEGSCGF 202

DB 181 TLLKNYWLICFCKDMSKVETFLRIVQCHSYEGSCGF 217

RESULT 13

Q8M175 PRELIMINARY; PRT; 217 AA.

AC Q8M175; ID Q8M175; DT 01-OCT-2002 (TREMBLrel. 22, Created)

DT 01-JUN-2003 (TREMBLrel. 24, Last sequence update)

DB Growth hormone like protein 5 precursor.

GN Callithrix jacchus (Common marmoset).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;

OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.

OC NCBI\_TaxID=9433;

RN -----SEQUENCE FROM N.A.

RA Wallis O.C.; Wallis M.;

RT "Characterisation of the GH gene cluster in a new-world monkey, the

RT marmoset (Callithrix jacchus).";

RL J. Mol. Endocrinol. 0.0-0(2002) .

DR EMBL; AJ489810; CAD4011.1; -.

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005179; F:hormone activity; IEA.

DR InterPro; IPR001400; Somatotropin.

DR Pfam; PF00103; hormone; 1.

DR PROSITE; PS00338; SOMATOTROPIN.

DR PRINTS; PR00836; SOMATOTROPIN.

DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.

FT SIGNAL; 1 26 POTENTIAL.

FT CHAIN 27 217 MW; E53419A76C8730F CRC64;

FT SEQUENCE 217 AA; 25020 MW; E53419A76C8730F CRC64;

RESULT 14

Q8M173 PRELIMINARY; PRT; 216 AA.

ID Q8M173; AC Q8M173;

DT 01-OCT-2002 (TREMBLrel. 22, Created)

DT 01-OCT-2002 (TREMBLrel. 22, Last sequence update)

DT 01-JUN-2003 (TREMBLrel. 24, Last annotation update)

DE GH.

GN Delphinus delphis (Saddleback dolphin) (Black sea dolphin).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;

OC Delphinus.

NCBI\_TaxID=9728;

RN -----SEQUENCE FROM N.A.

RC TISSUE=Liver;

RA Manicou Z.; Wallis O.C.; Wallis M.;

RT "Cloning and characterisation of the GH gene from the common dolphin

RT (Delphinus delphis).";

RT Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.

DR EMBL; AJ492191; CAD37292.1; -.

DR GO; GO:0005576; C:extracellular; IEA.

DR InterPro; IPR001400; Somatotropin; IEA.

DR Pfam; PF00103; hormone; 1.

RESULT 15

Q8M173 PRELIMINARY; PRT; 216 AA.

ID Q8M173; AC Q8M173;

DT 01-OCT-2002 (TREMBLrel. 22, Created)

DT 01-OCT-2002 (TREMBLrel. 22, Last sequence update)

DT 01-JUN-2003 (TREMBLrel. 24, Last annotation update)

DE GH.

GN Delphinus delphis (Saddleback dolphin) (Black sea dolphin).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;

OC Delphinus.

NCBI\_TaxID=9728;

RN -----SEQUENCE FROM N.A.

RC TISSUE=Liver;

RA Manicou Z.; Wallis O.C.; Wallis M.;

RT "Cloning and characterisation of the GH gene from the common dolphin

RT (Delphinus delphis).";

RT Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.

DR EMBL; AJ492191; CAD37292.1; -.

DR GO; GO:0005576; C:extracellular; IEA.

DR InterPro; IPR001400; Somatotropin; IEA.

DR Pfam; PF00103; hormone; 1.

RESULT 16

```

PRINTS: PRO0836; SOMATOTROPIN.
DR PROSITE; PS00266; SOMATOTROPIN_1;
DR SIGNAL; PS00338; SOMATOTROPIN_2;
KW SIGNAL.
FT SIGNAL 1 26 POTENTIAL.
FT CHAIN 27 216 GROWTH HORMONE.
SQ SEQUENCE 216 AA; 21509 MW; 1EC467A84CCFEB02 CRC64;

Query Match 67.0%: Score 702; DB 6; Length 216;
Best Local Similarity 64.5%; Pred. No. 9. 8e-59;
Matches 140; Conservative 20; Mismatches 41; Indels 16; Gaps 3;

Qy 1 MATGSRSTSLLIAFGGLLCLPWLQEGSAPPTIPLSLRFDNASLRAHRLHOLAFTDYOEF-- 57
Db 1 MAGGPRTSMLIAFGGLLCLPWLQEGSAPPTIPLSLRFDNASLRAHRLHOLAFTDYOEF-- 57
Qy 58 -----NPQTSLCLFSESIPTPSNRETOQKSNLLELRISILLIQLSLEPVQFLRS 106
Db 61 YIPEGQYRYSIQTQAAFCFSSETIPAPIGKDEAQQRSDVELLRFSLLIIQSMIGPVQFLSR 120
Qy 107 VFTNSLIVGASISNVYDILKDLLEGQITLMGRLEDGSPTGGIFKQIYSKFETNSINDA 166
Db 121 VFTNSLIVGFTSD-RVYEKLKDLLEGQIYSKFETNSINDA 179

Qy 167 LLKNYGLIYCFRKDMKDVKETFLRIVQCRS-VEGSCGF 202
Db 180 LLKNYGLIYCFRKDMKDVKETFLRIVQCRS-VEGSCGF 216


```

Search completed: July 12, 2004, 13:05:22  
 Job time : 46 secs



GenCore version 5.1.6  
Copyright (c) 1993 - 2004 Compugen Ltd.

protein - protein search, using sw model

on: July 12, 2004, 12:57:07 ; Search time: 61 Seconds  
(without alignments)  
935.849 Million cell updates/sec

Scoring table: BLOSUM62

searched: 1586107 seqs, 282547505 residues total number of hits satisfying chosen parameters:

Prestige and power

xi jum DB seq length: 0

Pre-processing: Maximum Match 0%      Maximum Match 100%

Listing first 45 summaries

abessa : *La Concorde 2020-2021* +

1: geneseseqp1980s:\*

2: geneseqp1990s: \* 21

4: geneseqP2001S;\*

```

> geneseqP2002:*
6: geneseqP2003as:*
7: geneseqP2003bs:*
8: geneseqP2004s:*

```

IMMATEC

Result		Query	Score	Match	Length	DB	ID	Description
No.								
1	1	1047	100.0	202	3	AYY93337	Aay93337 Amino acid	
	2	1029.5	98.3	217	2	AAR60516	Aar60516 Human somatotropin	
	3	1029.5	98.3	217	5	AAU11731	Aau11731 Growth hormone	
	4	1029.5	98.3	217	5	AAU11719	Aau11719 Growth hormone	
	5	1029.5	98.3	217	5	AAU11720	Aau11720 Growth hormone	
	6	1029.5	98.3	217	5	AAU11730	Aau11730 Growth hormone	
	7	1029.5	98.3	217	5	ABG65633	Abg65633 Human growth hormone	
	8	1028.5	98.2	217	5	AAU11742	Aau11742 Growth hormone	
	9	1028.5	98.2	217	5	AAU11726	Aau11726 Growth hormone	
	10	1026.5	98.0	217	5	AAU11746	Aau11746 Growth hormone	
	11	1025.5	97.9	217	5	AAU11747	Aau11747 Growth hormone	
	12	1025.5	97.9	217	5	AAU11735	Aau11735 Growth hormone	
	13	1025.5	97.9	217	5	AAU11744	Aau11744 Growth hormone	
	14	1025.5	97.9	217	5	AAU11722	Aau11722 Growth hormone	
	15	1025.5	97.9	217	5	AAU11728	Aau11728 Growth hormone	
	16	1024.5	97.9	217	2	AAR05169	Aar05169 Human growth hormone	
	17	1024.5	97.9	217	3	AAB26769	Aab26769 Secretory protein	
	18	1024.5	97.9	217	4	AAO11479	Aao11479 Human growth hormone	
	19	1024.5	97.9	217	4	AAB35428	Aab35428 Secretory protein	
	20	1024.5	97.9	217	5	AAU11741	Aau11741 Growth hormone	
	21	1024.5	97.9	217	5	AAU11727	Aau11727 Growth hormone	
	22	1024.5	97.9	217	5	AAU11748	Aau11748 Growth hormone	
	23	1024.5	97.9	217	5	AAU11736	Aau11736 Growth hormone	
	24	1024.5	97.9	217	5	AAU11750	Aau11750 Growth hormone	
	25	1024.5	97.9	217	5	AAU11743	Aau11743 Growth hormone	

26	1024.5	97.9	217	5	AAU11740	Growth ho
27	1024.5	97.9	217	5	AAU11721	Growth ho
28	1024.5	97.9	217	5	AAO19993	Protein O
29	1024.5	97.9	217	6	ABR42662	Human gro
30	1024.5	97.9	217	7	AOA29552	Human gro
31	1024.5	97.9	217	7	ADC61299	Human gro
32	1024.5	97.9	407	4	AAB49195	Human gro
33	1023.5	97.8	217	5	AAU11725	Growth ho
34	1023.5	97.8	217	5	AAU11734	Growth ho
35	1022.5	97.7	217	5	AAU11738	Growth ho
36	1022.5	97.7	217	5	AAU11739	Growth ho
37	1022.5	97.7	217	5	AAU11723	Growth ho
38	1022.5	97.7	217	5	AAU11724	Growth ho
39	1022.5	97.7	217	5	AAU11745	Growth ho
40	1022.5	97.7	217	5	AAU11901	Growth ho
41	1022.5	97.7	217	5	AAU11733	Growth ho
42	1021.5	97.6	217	5	AAU11749	Growth ho
43	1021.5	97.6	217	6	ABR42655	Human gro
44	1020.5	97.5	217	5	AAU11729	Human gro
45	1019.5	97.4	217	6	ABR42666	Human gro

## ALIGNMENTS

AA	Homo sapiens.	
OS		
XX		
PN		
XX	WO200030587-A2.	
XX		
PD	02-JUN-2000.	
XX		
PF	24-NOV-1999;	
XX	99WO-FR002897.	
PF		
PR	25-NOV-1998;	
XX	98FR-0014858.	
PA	(CNRS ) CENT NAT RECH SCI.	
XX		
XX		
PI	Hirsch F, Haeffner A;	
XX		
DR	WPI; 2000-39901/34.	
DR	N-PSDB; AAA46696.	
XX		
PT	Treatment of hematological or solid tumors using an inhibitor of the	
PT	activation of nuclear factor-kappaB, particularly to prevent development	
PT	of resistance to chemotherapeutics.	
PT		

XX PS Claim 10; Page 27-28; 30pp; French.  
XX CC The present sequence represents a human growth hormone (hGH). The human  
XX CC growth hormone protein is used as an inhibitor of the activation of  
XX CC nuclear factor-kappaB (NF-kappaB). The inhibitor inhibits activation of  
XX CC NF-kappaB, and thus transcription of the multi-drug resistance gene  
XX CC (which contains binding sites for NF-kappaB within its regulatory  
XX CC regions). The inhibitors are used to produce pharmaceuticals which may be  
XX CC used in the treatment of malignant hepatoma or solid tumours. The  
XX CC inhibitors are especially used to treat malignant blood diseases  
XX CC (leukaemia, lymphoma) and solid cancers (of breast or ovary)  
XX SO Sequence 202 **AA**

Query Match	Score 1047; DB 3; Length 202;	Best Local Similarity 93.1%; Pred. No. 9.6-88;	Best Local Similarity 93.1%; Pred. No. 9.6-88;
Best Local Similarity 100.0%; Pred. No. 2e-89; Matches 202; Conservative 0; Mismatches 0;	Indels 0; Gaps 0;	Indels 0; Gaps 0;	Indels 15; Gaps 1;
1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Qy	1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Qy
1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Db	1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Db
1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Qy	1 MATSRTSLLAFLGFLCFLWQESAAFTPLSLLFDNAFLRAFLHQAFDYQEFNFO	Qy
58 -----	58 -----	58 -----	58 -----
61 YIPRQQKYSFLQNQTSFLCFCSES1PTPSNEETQKSNLELLRISLLLQSLEPVQFLR	Db	61 YIPRQQKYSFLQNQTSFLCFCSES1PTPSNEETQKSNLELLRISLLLQSLEPVQFLR	Db
106 SVEANSLVYGASDSNVYDQFLKDLBPGTQFLMGRLEDGSPRTGQIFKQTYSKFDTNSHND	Qy	106 SVEANSLVYGASDSNVYDQFLKDLBPGTQFLMGRLEDGSPRTGQIFKQTYSKFDTNSHND	Qy
121 SVEANSLVYGASDSNVYDQFLKDLBPGTQFLMGRLEDGSPRTGQIFKQTYSKFDTNSHND	Db	121 SVEANSLVYGASDSNVYDQFLKDLBPGTQFLMGRLEDGSPRTGQIFKQTYSKFDTNSHND	Db
166 ALLKNVGLYCFRKMDKVETFLRIVQCRSYEVGSGCF	Qy	166 ALLKNVGLYCFRKMDKVETFLRIVQCRSYEVGSGCF	Qy
181 ALLKNVGLYCFRKMDKVETFLRIVQCRSYEVGSGCF	Db	181 ALLKNVGLYCFRKMDKVETFLRIVQCRSYEVGSGCF	Db
RESULT 3		RESULT 3	
AAU11731		AAU11731	
ID AAU11731;		ID AAU11731;	
XX		XX	
AC AAU11731;		AC AAU11731;	
XX		XX	
DT 12-MAR-2002 (first entry)		DT 12-MAR-2002 (first entry)	
XX		XX	
DE Growth hormone 1 gene (GH1), S69L mutant.		DE Growth hormone 1 gene (GH1), S69L mutant.	
XX		XX	
KW Growth hormone 1; GH1; osteopathia; gene therapy; protein therapy;		KW Growth hormone 1; GH1; osteopathia; gene therapy; protein therapy;	
KW diabetes; obesity; infection; acromegaly; gigantism; sodium retention;		KW diabetes; obesity; infection; acromegaly; gigantism; sodium retention;	
KW water retention; metabolic syndrome; mood disorder; sleep disorder;		KW water retention; metabolic syndrome; mood disorder; sleep disorder;	
KW Growth hormone dysfunction; familial growth hormone deficiency;		KW Growth hormone dysfunction; familial growth hormone deficiency;	
KW short stature; pituitary storage defect; human; mutant; mutein;		KW short stature; pituitary storage defect; human; mutant; mutein;	
XX		XX	
OS Homo sapiens.		OS Homo sapiens.	
XX		XX	
PH Synthetic.		PH Synthetic.	
XX		XX	
Key Misc-difference 69		Key Misc-difference 69	
FT /note: "wild type Ser substituted by Leu"		FT /note: "wild type Ser substituted by Leu"	
XX		XX	
WO200185993-A2.		WO200185993-A2.	
XX		XX	
AAR60516; 25-MAR-2003 (revised)		AAR60516; 25-MAR-2003 (revised)	
XX		XX	
22-MAR-1995 (first entry)		22-MAR-1995 (first entry)	
XX		XX	
Human somatotropin.		Human somatotropin.	
XX		XX	
Serine protease; Factor-Xa; recognition site; fusion protein cleavage; protein folding; growth hormone; somatotropin; primer; polymerase chain reaction; amplification.		Serine protease; Factor-Xa; recognition site; fusion protein cleavage; protein folding; growth hormone; somatotropin; primer; polymerase chain reaction; amplification.	
XX		XX	
Homo sapiens.		Homo sapiens.	
XX		XX	
WO9418227-A2.		WO9418227-A2.	
XX		XX	
18-AUG-1994.		18-AUG-1994.	
XX		XX	
04-FEB-1994; 94WO-DK000054.		04-FEB-1994; 94WO-DK000054.	
XX		XX	
04-FEB-1993; 93DK-00000130.		04-FEB-1993; 93DK-00000130.	
XX		XX	
05-FEB-1993; 93DK-00000139.		05-FEB-1993; 93DK-00000139.	
XX		XX	
03-DEC-1993; 93WO-GB002492.		03-DEC-1993; 93WO-GB002492.	
XX		XX	
(DENZ-) DENZYME APS.		(DENZ-) DENZYME APS.	
XX		XX	
Thogersen HC, Holter TL, Etzerodt M;		Thogersen HC, Holter TL, Etzerodt M;	
XX		XX	
WPI; 1994-279681/34.		WPI; 1994-279681/34.	
XX		XX	
Refolding of polypeptide molecules - using a cyclic process involving denaturing and renaturing conditions to produce a correctly folded prod.		Refolding of polypeptide molecules - using a cyclic process involving denaturing and renaturing conditions to produce a correctly folded prod.	
XX		XX	
Disclosure; Page 129-30; 202pp; English.		Disclosure; Page 129-30; 202pp; English.	
XX		XX	
CDNA encoding human somatotropin (aa sequence given in AAR60516) was PCR amplified using primers given in AAQ71248-49. Amplified cDNA was linked to a sequence encoding the Factor-Xa cleavage site (given in AAR60503), subcloned in vector pTRH6 so that it was N-terminally linked to a hexahistidine-encoding sequence and expressed in E. coli BL21. The resulting fusion protein included an affinity tag (AAR60513) that facilitated purification on Ni2+-activated NTA agarose. A cyclic procedure was used to obtain correctly folded recombinant protein. (Updated on 25-MAR-2003 to correct PN field.)			
XX		XX	
Sequence 217 AA;		Sequence 217 AA;	
Query Match 98.3%; Score 1029.5; DB 2; Length 217;		Query Match 98.3%; Score 1029.5; DB 2; Length 217;	

therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism; conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, syndromes, mood and sleep disorders; diagnosing GH dysfunction and determining pituitary storage defects. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH1 variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene mutations in the etiology of short stature; identifying of the mode of diagnostic tests for inherited GH deficiency; this sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in Figure 6

Sequence 217 AA;

Query Match 98.3%; Score 1029.5; DB 5; Length 217;  
Best Local Similarity 93.1%; Pred. No. 9.6e-88;  
Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

Qy 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEF-- 57  
Db 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEFRA 60  
Qy 58 -----NPQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 105  
Db 61 YIPKQKYLFLQNQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 120  
Qy 106 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 165  
Db 121 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 180  
Qy 166 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 202  
Db 181 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 217

Sequence 217 AA;

Query Match 98.3%; Score 1029.5; DB 5; Length 217;  
Best Local Similarity 93.1%; Pred. No. 9.6e-88;  
Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;  
Qy 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEF-- 57  
Db 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEFRA 60  
Qy 58 -----NPQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 105  
Db 61 YIPKQKYLFLQNQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 120  
Qy 106 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 165  
Db 121 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 180  
Qy 166 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 202  
Db 181 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 217

RESULT 4  
AAU11719  
ID AAU11719 standard; protein: 217 AA.  
XX AAU11719;  
XX DT 12-MAR-2002 (first entry)  
XX DB Growth hormone 1 gene (GH1), major isoform.  
XX KW Growth hormone 1; GH1; osteopathic; gene therapy; protein therapy;  
XX diabetes; obesity; infection; acromegaly; gigantism; sodium retention;  
XX water retention; metabolic syndrome; mood disorder; sleep disorder;  
XX Growth hormone dysfunction; familial growth hormone deficiency;  
XX short stature; pituitary storage defect; human; chromosome 17q23.  
XX Homo sapiens.  
XX PN WO200185993-A2.  
XX PD 15-NOV-2001.  
XX PF 14-MAY-2001; 2001WO-GB002126.  
XX PR 12-MAY-2000; 2000GB-0001459.  
PR 14-JUL-2000; 2000EP-0030604.  
XX PA (UYWA-) UNIV WALES COLLEGE OF MEDICINE.  
XX PI Cooper DN, Procter AM, Gregory J, Millar DS;

XX DR WPI; 2002-089798/12.  
XX DR N-PSDB; AAU11887.  
XX PT Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.  
PS Disclosure; Fig 6; 95pp; English.  
XX  
CC The invention described a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating irregularities, and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining CC binding defects and susceptibility to a disease such as diabetes, obesity CC or infection; for treating acromegaly or gigantism conditions associated CC with lactogenic, diabetogenic, lipolytic and protein anabolic effects, CC syndromes, mood and sleep disorders; diagnosing GH dysfunction and CC determining pituitary storage defects. The GH1 variants are especially CC useful in gene therapy or protein therapy. The GH1 or GH variant may also CC be used in the preparation of a medicament, diagnostics composition or CC conditions associated with sodium and water retention, metabolic CC syndrome, mood and sleep disorders; diagnosing GH dysfunction and CC determining pituitary storage defects. The GH1 variants are especially CC useful in gene therapy or protein therapy. The GH1 or GH variant may also CC be used in the preparation of a medicament, diagnostics composition or CC kit, or detection kit. The method has the advantage of: expanding the CC known spectrum of GH1 gene mutations; evaluating the role of GH1 gene CC mutations in the etiology of short stature; identifying of the mode of CC inheritance of novel lesions; evaluation the effects of GH1 mutations on CC the structure and function of the GH molecule and development of rapid CC diagnostic tests for inherited GH deficiency. This is the amino acid CC sequence of the major isoform of human growth hormone 1 (GH1, located on CC chromosome 17q23), used as a reference sequence for creating the mutants CC (AAU11721-AAU11750 and AAU11901) described in the method of the invention  
XX Sequence 217 AA;

Query Match 98.3%; Score 1029.5; DB 5; Length 217;  
Best Local Similarity 93.1%; Pred. No. 9.6e-88;  
Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;

Qy 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEF-- 57  
Db 1 MATGSRSTSLLAFLGLLCLPWLQEGSAFPITPLSRFLDNASLRHRLHQAFDTYQEFRA 60  
Qy 58 -----NPQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 105  
Db 61 YIPKQKYLFLQNQTSIQLQFSESTIPTPSNREETQKSNLELLRLISLILQSWEPLPVQFLR 120  
Qy 106 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 165  
Db 121 SVFANSLYVGASDNYVLDLKDLEGITQMLGRLEDGSRTQGIFKOTYSKFDTNSHND 180  
Qy 166 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 202  
Db 181 ALLKNGYGLLYCPRKDMKDVKETFLRIVCRSVEGSCGF 217

RESULT 5  
AAU11720  
ID AAU11720 standard; protein: 217 AA.  
XX AC AAU11720;  
XX DT 12-MAR-2002 (first entry)  
XX DE Growth hormone 1 gene (GH1), E56G mutant.  
XX KW Growth hormone 1; GH1; osteopathic; gene therapy; protein therapy;  
KW diabetes; obesity; infection; acromegaly; gigantism; sodium retention;



CC kit, or detection kit. The method has the advantage of: expanding the CC known spectrum of GH1 gene mutations; evaluating the role of GH1 gene CC mutations in the etiology of short stature; identifying the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on CC the structure and function of the GH molecule and development of rapid CC diagnostic tests for inherited GH deficiency. This sequence is a variant CC of human growth hormone 1 (GH1), one of many variations of the gene CC discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type CC sequence (AAU11719) given in Figure 6

XX Sequence 217 AA;

Query Match 98.3%; Score 1029.5; DB 5; Length 217;  
Best Local Similarity 93.1%; Pred. No. 9.6e-88;  
Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;  
Db 1 MATGSRSTLILAFGLQCLPMLQEGSAAFTPLSLRFDNALSRAIRLHQALAFDTYQEF---  
Db 1 MATGSRSTLILAFGLQCLPMLQEGSAAFTPLSLRFDNALSRAIRLHQALAFDTYQEFRA 60  
Qy 58 -----NPQTSLCSESSETPSPRERETQOKSNELLRISLLIQSWLEPVQFLR 105  
Db 61 YIPKQRYSFQNQTSCLCSESSETPSPRERETQOKSNELLRISLLIQSWLEPVQFLR 120  
Qy 106 SVFANSLYVGASDNYDILKDLBEGITQTMGRLEDGSPTGQIFKOTYSKFDTNNSHDD 165  
Db 121 SVFANSLYVGASDNYDILKDLBEGITQTMGRLEDGSPTGQIFKOTYSKFDTNNSHDD 180  
Qy 166 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVEGSCGF 202  
Db 181 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVEGSCGF 217

RESULT 7  
ABG60633 ID ABG60633 standard, protein; 217 AA.  
AC ACB60633;  
DT 13-AUG-2002 (first entry)  
XX Human growth hormone (hGH).  
DE Human growth hormone (hGH).  
KW Transcellular transport; Transcytotic transport; paracellular transport;  
KW respiratory system disorder; lung cancer; tumour; asthma;  
KW pathogenic infection; allergy-related disorder;  
KW Gastrointestinal tract disorder; gastrointestinal hormone disorder;  
KW Chron's disease; eating disorder; polyimmunoglobulin receptor; pigr.  
OS Homo sapiens.  
XX WO200228408-A2.  
PN 11-APR-2002.  
XX 02-OCT-2001; 2001WO-US030832.  
PR 02-OCT-2000; 2000US-0237929P.  
PR 13-NOV-2000; 2000US-0248418P.  
PR 14-NOV-2000; 2000US-0248819P.  
PR 09-FEB-2001; 2001US-0267601P.  
XX (ARIZ-) ARIZEKE PHARM INC.  
PA Houston LL, Sheridan PJ, Hawley S, Glynn JM, Chapin S, Basu A;  
XX DR WPI; 2002-416628/44.  
XX DR N-PSD; AB81192.

XX Disclosure; Fig 22; 379PP; English.  
XX The invention described a complex or compound (I) comprising a  
CC biologically active portion and a target element (II) directed to a  
CC ligand that confers transcellular transcytotic or paracellular  
CC transporting properties to an agent specifically bound to the ligand,  
CC where (II) is not an antibody. Alternatively, (I) comprises two or more  
CC (II) directed to one or more ligands. (I) is useful for delivering a active agent  
CC biologically active agent to an animal, for transporting an active agent  
CC through an epithelial or mucosal barrier, and for treating or identifying  
CC a disease in an animal e.g. diseases of the respiratory system including  
CC lung cancer and tumours, asthma, pathogenic infections, allergy related  
CC disorders, gastrointestinal tract disorders, disorders relating to  
CC gastrointestinal hormones, Chron's disease, eating disorders and any  
CC disease or disorder involving polyimmunoglobulin receptor (pigr).  
CC This is the amino acid sequence of a protein associated  
CC with the transport of biologically active agents across cellular barriers  
XX Sequence 217 AA;

Query Match 98.3%; Score 1029.5; DB 5; Length 217;  
Best Local Similarity 93.1%; Pred. No. 9.6e-88;  
Matches 202; Conservative 0; Mismatches 0; Indels 15; Gaps 1;  
Qy 1 MATGSRSTLILAFGLCLPMLQEGSAAFTPLSLRFDNALSRAIRLHQALAFDTYQEF---  
Db 1 MATGSRSTLILAFGLCLPMLQEGSAAFTPLSLRFDNALSRAIRLHQALAFDTYQEFRA 60  
Qy 58 -----NPQTSLCSESSETPSPRERETQOKSNELLRISLLIQSWLEPVQFLR 105  
Db 61 YIPKQRYSFQNQTSCLCSESSETPSPRERETQOKSNELLRISLLIQSWLEPVQFLR 120  
Qy 106 SVFANSLYVGASDNYDILKDLBEGITQTMGRLEDGSPTGQIFKOTYSKFDTNNSHDD 165  
Db 121 SVFANSLYVGASDNYDILKDLBEGITQTMGRLEDGSPTGQIFKOTYSKFDTNNSHDD 180  
Qy 166 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVEGSCGF 202  
Db 181 ALLKNYGLLYCFRKDMDKVETFLRIVQCRSVEGSCGF 217

RESULT 8

AAU11742

XX AAU11742 standard; protein; 217 AA.  
AC AAU11742;  
DT 12-MAR-2002 (first entry)  
XX Growth hormone 1 gene (GH1), V136I mutant.  
XX DE AAU11742 standard; protein; 217 AA.  
XX KW Growth hormone 1; GH1; osteopathic; gene therapy; protein therapy;  
KW diabetes; obesity; infection; acromegaly; giantism; sodium retention;  
KW water retention; metabolic syndrome; mood disorder; sleep disorder;  
KW Growth hormone dysfunction; familial growth hormone deficiency;  
KW short stature; pituitary storage defect; human; mutant; mutein.  
XX OS Homo sapiens.  
XX Synthentic.  
Key FH  
FT Misc-difference 136  
FT /note= "Wild type Val substituted by Ile"

XX WO200185993-A2.  
XX 15-NOV-2001.  
PN PD  
XX PF 14-MAY-2001; 2001WO-GB002126.  
XX PR 12-MAY-2000; 2000GB-00011459.  
PR 14-JUL-2000; 2000EP-00306004.

DE Growth hormone 1 gene (GH1), I130V mutant.  
 XX  
 PA (UWYA-) UNIV WALES COLLEGE OF MEDICINE.  
 XX  
 PI Cooper DN, Procter AM, Gregory J, Millar DS;  
 XX  
 WPI: 2002-089798/12.  
 XX  
 Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.  
 XX  
 PS Claim 18; Page: 95pp; English.  
 XX  
 The invention describes a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating irregularities, and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic syndromes, mood and sleep disorder; diagnosing GH dysfunction and determining pituitary storage defects. The GH1 or GH variant may also be used in gene therapy or protein therapy. The diagnostic composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene mutations in the etiology of short stature; identifying of the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in figure 6  
 XX  
 Sequence 217 AA;  
 SQ Query Match 98.2%; Score 2028.5; DB 5; Length 217;  
 Best Local Similarity 92.6%; Prod. No. 1.2e-87;  
 Matches 201; Conservative 1; Mismatches 0; Indels 15; Gaps 1;  
 DB 1 MATGSRSTIILLAGLCLPWLQGSAAPIPLSRFLDNASLRAHRLQAFYQEF--- 57  
 DB 1 MATGSRSTIILLAGLCLPWLQGSAAPIPLSRFLDNASLRAHRLQAFYQEFEEA 60  
 QY 58 -----NPOTSLCFSEIPTPSNREETQKSNLELLRISLILQSWLEPVQFLR 105  
 DB 61 YIPKEQKYSFLQNFQTSLCFSEIPTPSNREETQKSNLELLRISLILQSWLEPVQFLR 120  
 QY 106 SVPFNSLYGASNSNVYDILKDLFEGIQLTMLGRLEDGSPRTGQIFKQTYSKFDTNHND 165  
 DB 121 SVFNSLYGASDENYDILKDLFEGIQLTMLGRLEDGSPRTGQIFKQTYSKFDTNHND 180  
 QY 166 ALLKNGGLYCPRKDMKVETELRIVQCRSVEGSGCF 202  
 DB 181 ALLKNGGLYCPRKDMKVETELRIVQCRSVEGSGCF 217  
 XX  
 SQ Sequence 217 AA;

RESULT 9  
 AAU11726  
 ID AAU11726 standard; protein; 217 AA.  
 XX  
 AAU11726;  
 XX  
 DT 12-MAR-2002 (first entry)  
 XX

Query Match 98.2%; Score 1028.5; DB 5; Length 217;  
 Best Local Similarity 92.6%; Prod. No. 1.2e-87;  
 Matches 201; Conservative 1; Mismatches 0; Indels 15; Gaps 1;  
 QY 1 MATGSRSTIILLAGLCLPWLQGSAAPIPLSRFLDNASLRAHRLQAFYQEF--- 57

Db	1	MATGSRSTLILAFGLLCLPQEGSAFTPLVPLRSFDNAISLAHRLHQALAFDTYQEEA	60	syndromes, mood and sleep disorders; diagnosing GH dysfunction and determining pituitary storage defects. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene mutations in the etiology of short stature; identifying the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU1719) given in figure 6
Qy	58	-----NPQTSILCFSESIPTPSNRRETTQKSNLELIRISLILQSMLEPVDFLR	105	XX
Db	61	YIPKEQKYSFLQNPQTSILCFSESIPTPSNRRETTQKSNLELIRISLILQSMLEPVDFLR	120	XX
Qy	106	SVFANSLVGASDSNVYDILKLDLEGITQTMGRLEDSPRITCQIFKOTYSKFDTNSHND	165	XX
Db	121	SVFANSLVGASDSNVYDILKLDLEGITQTMGRLEDSPRITCQIFKOTYSKFDTNSHND	180	XX
Qy	166	ALLKNYGLIYCFRKMDKVTFLRIVQCRSYVGSCGF	202	XX
Db	181	ALLKNYGLIYCFRKMDKVTFLRIVQCRSYVGSCGF	217	XX
<b>RESULT 10</b>				
	AAU1746	AAU1746 standard; protein: 217 AA.		
	XX			
	AC	AAU1746;		
	XX			
	DT	12-MAR-2002 (first entry)		
	XX			
	DE	Growth hormone 1 gene (GH1), K194R mutant.		
	XX			
	KW	Growth hormone 1; GH1; osteopathic; gene therapy; Protein therapy;		
	KW	diabetes; obesity; infection; acromegaly; gigantism; sodium retention;		
	KW	water retention; metabolic syndrome; mood disorder; sleep disorder;		
	KW	Growth hormone dysfunction; familial growth hormone deficiency;		
	KW	short stature; pituitary storage defect; human; mutant; mutant.		
	XX			
	OS			
	OS			
	Synthetic.			
	Key	Location/Qualifiers		
	Misc-difference	194		
	FT	/note= "Wild type Lys substituted by Arg"		
	XX			
	PN	W0200185993-A2.		
	XX			
	PD	15-NOV-2001.		
	XX			
	PF	14-MAY-2001; 2001WO-GB002126.		
	XX			
	PR	12-MAY-2000; 2000GB-00011459.		
	PR	14-JUL-2000; 2000EP-00306004.		
	XX			
	PA	(UWYA-) UNIV WALES COLLEGE OF MEDICINE.		
	XX			
	PI	Cooper DN, Procter AM, Gregory J, Millar DS;		
	XX			
	WPI:	2002-089798/12.		
	XX			
	PT	Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.		
	XX			
	PS	Claim 18; Page; 95pp; English.		
	XX			
	FT	The invention described a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing a standard human GH1 gene sequence obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating growth hormone irregularities, and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic		
	XX			
	PN	WO200185993-A2.		
	XX			
	PD	15-NOV-2001.		
	XX			
	PF	14-MAY-2001; 2001WO-GB002126.		
	XX			
	PR	12-MAY-2000; 2000GB-00011459.		
	PR	14-JUL-2000; 2000EP-00306004.		
	XX			
	PA	(UWYA-) UNIV WALES COLLEGE OF MEDICINE.		
	XX			
	PI	Cooper DN, Procter AM, Gregory J, Millar DS;		
	XX			
	WPI:	2002-089798/12.		
	XX			
	PT	Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.		
	XX			
	PS	Claim 18; Page; 95pp; English.		
	XX			
	FT	The invention described a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing a standard human GH1 gene sequence obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating growth hormone irregularities, and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic		
	XX			
	PN	WO200185993-A2.		
	XX			
	PD	15-NOV-2001.		
	XX			
	PF	14-MAY-2001; 2001WO-GB002126.		
	XX			
	PR	12-MAY-2000; 2000GB-00011459.		
	PR	14-JUL-2000; 2000EP-00306004.		
	XX			
	PA	(UWYA-) UNIV WALES COLLEGE OF MEDICINE.		
	XX			
	PI	Cooper DN, Procter AM, Gregory J, Millar DS;		
	XX			
	WPI:	2002-089798/12.		
	XX			
	PT	Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.		
	XX			
	PS	Claim 18; Page; 95pp; English.		
	XX			

XX WPI; 2002-089798/12.

DR Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.

XX P8 Claim 18; Page: 95pp; English.

XX CC The invention described a method of detecting variation in growth hormone (GH1), and therefore GH dysfunction in an individual. The method compares comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating irregularities and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic syndromes, mood and sleep disorders, diagnosing GH dysfunction and determining pituitary storage defects. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene mutations in the etiology of short stature; identifying of the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in figure 6

XX SQ Sequence 217 AA;

Query Match 97.9%; Score 1025.5; DB 5; Length 217;

Best Local Similarity 92.6%; Pred. No. 2,3e-87;

Matches 201; Conservative 1; Mismatches 0; Indels 15; Gaps 1;

Qy 1 MATGSRSTLILLAFGLLCLPWLQEGSAAFPITPLSRLFDNLSRHLQAFDTYQEF--- 57

Db 1 MATGSRSTLILLAFGLLCLPWLQEGSAAFPITPLSRLFDNLSRHLQAFDTYQEFEEA 60

Qy 58 -----NPOTSLCFSCESIPTPSNREETQKSNLEIIRISLILLQSNLEPVQLR 105

Db 61 YIPKEQKYSFLQNPQTPOTQSCFSESPTPQNREETQKSNLEIIRISLILLQSNLEPVQLR 120

Qy 106 SFAVANSLVYGASDNVYDILKDLDEGIGTQLMGPLEDGSPTRGQIFKQTYSKPDTNSNDD 165

Db 121 SFAVANSLVYGASDNVYDILKDLDEGIGTQLMGPLEDGSPTRGQIFKQTYSKPDTNSNDD 180

Qy 166 ALLKNGGLYCFRKDMKVETFLRIVQCRSVEGSGCF 202

Db 181 ALLKNGGLYCFREDMDKVETFLRIVQCRSVEGSGCF 217

RESULT 12

ID AAU11735 standard; protein; 217 AA.

XX AC AAU11735;

XX DT 12-MAR-2002 (First entry)

XX DE Growth hormone 1 gene (GH1), E100K mutant.

XX KW Growth hormone 1; GH1; osteopathic; gene therapy; protein therapy; diabetes; obesity; infection; acromegaly; gigantism; sodium retention;

KW water retention; metabolic syndrome; mood disorder; sleep disorder; short stature; pituitary storage defect; human; mutant; muatein.

XX OS Synthetic.

XX OS Synthetic.

XX FH Key

FT Misc-difference 100

FT /note= "Wild type Glu substituted by Lys"

XX PN WO200185993-A2.

XX PD 15-NOV-2001.

XX PP 14-MAY-2001; 2001WO-GB002126.

XX PR 12-MAY-2000; 2000GB-0011459.

XX PR 14-JUL-2000; 2000EP-0030804.

XX PA (UYWA-) UNIV WALES COLLEGE OF MEDICINE.

XX PI Cooper DN, Procter AM, Gregory J, Millar DS;

XX DR 2002-089798/12.

XX PT Detecting growth hormone variants (GH1), useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.

XX PT Claim 18; Page: 95pp; English.

XX PS The invention described a method of detecting variation in growth hormone (GH1), and therefore GH dysfunction in an individual. The method comprises comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating irregularities and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the effects of GH1 gene mutations in the etiology of short stature; identifying of the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in figure 6

XX SQ Sequence 217 AA;

Query Match 97.9%; Score 1025.5; DB 5; Length 217;

Best Local Similarity 92.6%; Pred. No. 2,3e-87;

Matches 201; Conservative 1; Mismatches 0; Indels 15; Gaps 1;

Qy 1 MATGSRSTLILLAFGLLCLPWLQEGSAAFPITPLSRLFDNLSRHLQAFDTYQEF--- 57

Db 1 MATGSRSTLILLAFGLLCLPWLQEGSAAFPITPLSRLFDNLSRHLQAFDTYQEFEEA 60

Qy 58 -----NPOTSLCFSCESIPTPSNREETQKSNLEIIRISLILLQSNLEPVQLR 105

Db 61 YIPKEQKYSFLQNPQTPOTQSCFSESPTPQNREETQKSNLEIIRISLILLQSNLEPVQLR 120

Qy 106 SFAVANSLVYGASDNVYDILKDLDEGIGTQLMGPLEDGSPTRGQIFKQTYSKPDTNSNDD 165

Db 121 SFAVANSLVYGASDNVYDILKDLDEGIGTQLMGPLEDGSPTRGQIFKQTYSKPDTNSNDD 180

Qy 166 ALLKNGGLYCFRKDMKVETFLRIVQCRSVEGSGCF 202

Db 181 ALLKNGGLYCFREDMDKVETFLRIVQCRSVEGSGCF 217

Qy 58 -----NPOTSLCFSCESIPTPSNREETQKSNLEIIRISLILLQSNLEPVQLR 105



PT growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1.  
 XX  
 PS Claim 18; Page; 95pp; English.  
 XX  
 The invention described a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating irregularities, and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic syndromes, mood and sleep disorders; diagnosing GH dysfunction and determining pituitary storage defects. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene mutations in the etiology of short stature; identifying the mode of inheritance of novel lesions; evaluation the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in figure 6

XX

Sequence 217 AA;

Query Match 97.9%; Score 1025.5; DB 5; Length 217;  
 Best Local Similarity 92.6%; Pred. No. 2.3e-37; 1; Mismatches 0; Indels 15; Gaps 1;  
 Matches 201; Conservative 1; MisMatches 1; Indels 0; Gaps 1;  
 QY 1 MATGSRSLIAGLCLPWLQGSAPPTIPLSRLLFFNASLRAHRLQAFPTYQEF---  
 Db 1 YIPKEQKYSFLQNPOTSLCFCSSPTPSNREETQKSNLEILRISLIIQSLEPVFLR 120  
 Db 1 VATGSRSLIAGLCLPWLQGSAPPTIPLSRLLFFNASLRAHRLQAFPTYQEFBEA 60  
 QY 58 -----NPQTSLCEFSRSPTSNREETQKSNLEILRISLIIQSLEPVFLR 105  
 Db 61 YIPKEQKYSFLQNPOTSLCFCSSPTPSNREETQKSNLEILRISLIIQSLEPVFLR 120  
 QY 106 SVFANSILVYAGSDSNVYDILKQLEEGQTMGRLEDSPRTGQFKQYQSKPDTSNDD 165  
 Db 121 SVFANSILVYAGSDSNVYDILKQLEEGQTMGRLEDSPRTGQFKQYQSKPDTSNDD 180  
 QY 166 ALLKNGLYLGYCFRKDMKVETFLRIVQRSVEGSCGF 202  
 Db 181 ALLKNGLYLGYCFRKDMKVETFLRIVQRSVEGSCGF 217

OS Homo sapiens.  
 OS Synthetic.

XX

Key Location/Qualifiers

FT Misc-difference 48

FT /note= "Wild type Gln substituted by Arg"

XX

PN WO200185993-A2.

XX

PD 15-NOV-2001.

XX

PF 14-MAY-2001; 2001WO-GB0002126.

XX

PR 12-MAY-2000; 2000GB-00011459.

XX

PR 14-JUL-2000; 2000EP-00306004.

XX

(UYWA-) UNIV WALES COLLEGE OF MEDICINE.

XX

Cooper DN, Procter AM, Gregory J, Millar DS;

XX

WPI; 2002-089798/12.

XX

Claim 18; Page; 95pp; English.

XX

The invention described a method of detecting variation in growth hormone 1 (GH1), and therefore GH dysfunction in an individual. The method comprises comparing the nucleotide sequence of GH1 gene obtained from the test sample with a standard human GH1 gene sequence, in order to identify variation (GH1 variant). The method is useful in screening patients for growth hormone irregularities, comprises comparing the nucleotide sequence of a GH1 gene from a test sample with that of a standard sequence of the human GH1. The method is useful in screening patients for growth hormone irregularities or producing variant proteins for treating growth hormone irregularities and for the early detection and appropriate clinical management of familial GH deficiency. The GH1 variants are useful in therapeutic, diagnostic or detection method, particularly for determining binding defects and susceptibility to a disease such as diabetes, obesity or infection; for treating acromegaly or gigantism conditions associated with lactogenic, diabetogenic, lipolytic and protein anabolic effects, conditions associated with sodium and water retention, metabolic syndromes, mood and sleep disorders; diagnosing GH dysfunction and determining pituitary storage defects. The GH1 variants are especially useful in gene therapy or protein therapy. The GH1 or GH variant may also be used in the preparation of a medicament, diagnostics composition or kit, or detection kit. The method has the advantage of: expanding the known spectrum of GH1 gene mutations; evaluating the role of GH1 gene in the etiology of short stature; identifying the effects of GH1 mutations on the structure and function of the GH molecule and development of rapid diagnostic tests for inherited GH deficiency. This sequence is a variant of human growth hormone 1 (GH1), one of many variations of the gene discussed in the method of the invention. Note: This sequence does not appear in the specification but has been created from the GH1 wild type sequence (AAU11719) given in figure 6

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Sequence 217 AA;

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PS

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Db	Qy	Db	Qy
1.21	SVEANSLVYGA DMSNVYDL	1.66	ALLKNGLYL CFKMDKVBTF
	KDKDLEGITQ LMLRQCRSVE		GGCF
		1.91	NTKQYCL LYCPYDMM
			TTTTTTTTTTTT

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